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ABSTRACT

The document presents the full texts of conference papers that examine questions and tentative answers about learning. The 12 formal papers center around three questions: (1) what has recent research, experimentation, and experience taught us about learning? (2) what barriers to the use of this knowledge exist in our society, our educational system, and organizations? and (3) given that application of new knowledge and ideas are often thwarted by real and perceived constraints, what can state school officers do? The papers were delivered by educational consultants, thinkers, researchers, and practitioners. Speakers addressed the topics of theories and processes of learning, learning continuity over a long time interval, learning environments, the relationship between work experience and learning, skills that should be learned for the future, educational quality, declining scores, humanistic learning, and programs for culturally different and special education. Programs for linguistically and culturally different students and problems of handicapped and disturbed students are described. The final report summarizes the conference as concentrating on 12 interconnecting rings of learning which can be expressed on six levels: settling what we know about learning, setting goals and desirable conditions, encouraging learning for youth, improving learning through humanism and school personnel, recognizing special student needs, and realizing the limitations of our present knowledge about learning. (Author/DB)

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Learning:

An Overview & Update

A Report of the
CHIEF STATE SCHOOL OFFICERS
1976 SUMMER INSTITUTE
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edited by
Kenneth H. Hansen, Institute Director

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Introduction

The Chief State School Officers this year selected as the focus of their Summer Institute — an anuual training program dating back to 1970 — a single-word topic of enormous complexity: "Learning."

Selection of this topic reflected the Chiefs' concern with what they feel to be their primary and ultimate leadership responsibility: improving the educational process itself. Therefore, they wanted to raise three significant questions for discussion and deliberation:

(1) What has recent research, experimentation, and experience taught us about learning?

(2) What barriers to the use of this knowledge exist in our society, our educational systems, and our own organizations?

(3) Given the existing conditions—the application of new knowledge and ideas being often thwarted by real and perceived contraints—what can Chiefs do?

To raise these questions (and to provide the basis for at least tentative answers) a staff of extraordinarily distinguished consultants—thinkers, researchers, practitioners—was brought together as the Institute leadership team.

This Institute report reffects in a variety of ways—formal papers, synopses, and composite reports of group presentations—the contributions of the outside consultants. But it cannot reflect, except by implication, the substantial contributions made by the Chiefs themselves through their probing questions and thoughtful analyses of the issues raised as the program developed over the seven days of the Institute. For the Chiefs themselves were involved not just as learners, but as active consultants whose performance was integral to the success of the program.

This report has been prepared primarily for the Institute participants and the agency which funded the project, the U. S. Office of Education. It is hoped that the important insights and analyses it contains, expressed in the words of some of the nation's top educational thinkers, can be shared by others who are concerned about improving learning.

Kenneth H. Hansen
Institute Director

Chapter I

WHAT HAVE WE LEARNED ABOUT LEARNING? OVERVIEW AND UPDATE

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Introduction

It is fashionable among psychologists to say that we know very little about human learning, and, perhaps, in their terms this is true. But the task scientific psychologists have undertaken is different from that of the educator. The scientist seeks to construct a theory of explanation and/or prediction of a complex phenomenon. A satisfactory theory from the scientist's point of view can be expressed as a mathematical equation that includes very few variables. These variables should be measurable and the numbers obtained from the equation should be a close fit to the numbers actually obtained from the measures of relevant aspects of the real phenomenon. The task of the educator, on the other hand, is to stimulate and guide desired learning. Any knowledge that enables him to be more effective in stimulating and guiding learning has value for him. In this sense, we know a great deal about learning. I do not mean to say that scientific psychology is not helpful to the educator. As the scientific psychologist is able to identify variables that contribute to his equation and is able to approximate their relationship to the actual observed aspects of particular examples of learning, this knowledge can help the educator understand more fully the learning process. However, the educator does not need to wait for further progress in the psychologist's efforts in order that he may stimulate and guide learning with considerable effectiveness. The knowledge we now possess obtained from millennia of experience and a century of experimentation is very helpful to the educator and needs to be utilized much more fully in order to improve the effectiveness of education.

Description of the Learning Process

Learning is commonly defined as the acquisition of new patterns of behavior through experience. Behavior is used in this sense to include all kinds of reactions an individual is capable of carrying on. One can acquire a new skill, a new habit, a new interest, a new attitude, a new way of thinking, a new way of perceiving some complex phenomenon; all of these are illustrations of human learning.

We know that learning is a universal characteristic of all human beings. Behavior that is instinctive, that requires no practice or previous experience to carry on effectively is very limited in the human species. No child could survive the first year of life without learning many things. Learning is as natural and universal among humans as respiration or digestion. There are no non-learners. Some children are called non-learners, but close observation reveals that these children are learning. They may not be learning what the school seeks to teach. They may be learning to play basketball, to gain friends, to do other things that seem important to them, and appear to be impervious to the teaching in the classroom. The problems of the educator is to stimulate and guide students in learning what is educationally valuable.

We know something of what takes place when a human being learns. He carries on some behavior that is new for him, something he has not done before. If he finds it satisfying he does it again, and if he continues to gain satisfaction as he carries on the behavior, it becomes part of his repertoire and he uses it in those situations where it is appropriate. Then, we say, he has learned it.

Motivation

This is a simplified description of learning. Certain features of it require elaboration and further explanation. The first question that comes to mind is what gets the learner started in carrying on new behavior. There are several possible circumstances in which one may carry on new behavior. It may be a part of some activity which he has been doing in the past but this time the behavior is accompanied by something that he finds satisfying. He is stimulated to repeat the behavior and thus he gets started in learning. A second circumstance in which one starts to carry on new behavior is during exploratory reactions which are so common in young children but are also characteristic of youth and of older people. Most children start to learn to talk as they explore the sounds they can make. The parents' approval of the sound "Ma Ma" and "Da Da" furnishes the satisfaction that stimulates the practice of these sounds until they are part of the child's repertoire.

This reinforcement of a particular behavior that is not consciously directed by the learner in advance is the process utilized in animal training. Psychologists call it operant conditioning. It will be discussed at greater length later.

The dependence upon circumstances in which the learner unconsciously carries on the desired behavior in order to start the learning process is neither appropriate nor efficient for stimulating and guiding the learning of complex human behavior like reading, computation and problem solving. The school depends largely on conscious efforts of students to carry on the desired behavior. When one sees another person doing something that appears significant or enjoyable, he may try to emulate the behavior and thus get started in the learning process. Or he may believe that a certain behavior is essential to something else that he desires, and he will try it. These are common sources of motivation for learning, but they are not the only ones. If the student accepts the views of the teacher, parents, friends or other persons, whom he respects, that their behavior is something he should learn, this can be a motivating force.

Clarity of Goal

In trying to carry on the behavior to be learned, the student needs to have a clear conception of what it is he is trying to learn. The child or youth who wants to learn to play baseball or to dance can gain, as he watches games or dances, at least a rough notion of what the behavior is that he is to learn, so that he can emulate those who seem to be carrying on successfully. It is all too rare for teachers to demonstrate in their normal actions much of the behavior they would like to help children learn, and even more rare for them to express in ways children can perceive how meaningful and satisfying this behavior is. Hence, the students' perceptions of what they are trying to learn are inaccurate and frequently in conflict with the objectives the teacher has in mind. It is important in this connection to recognize that conscious human learning requires that the student perceive something to be learned that is attractive to him, or to use the current phrase, "it must be relevant and meaningful." He must also see clearly enough what he needs to learn so that he can take the initial steps in emulating this behavior.

Confidence

There is, however, a possible factor that may inhibit the student from attempting the behavior even though he would like to try it. If he feels that he cannot do the learning task he is not likely to attempt it. Hence, he needs to have confidence that he can do what is expected. He does not want to be perceived as a failure by his classmates. Confidence can be developed by encouragement, by providing initial learning tasks that appear "easy" and by helping the student to see that he did and could carry on the behavior.

Rewards

As the student successfully carries on the behavior he is seeking to learn, the stimulation to continue the practice comes from the rewards, that is, the satisfaction he obtains from successful performance. There are many possible rewards that are satisfying, but in a democratic school the nature of the reward system itself must be consistent with the role of a self-directive, responsible person. Students need to be helped to discover the satisfaction that comes from having acquired and used new understanding, new interests, new attitudes, new skills, rather than depending largely on the rewards that are extraneous to the learning process itself. As a student develops character structure and conscience or to use another current phrase, "a stable self-image," rewards that arise from learning what he believes is in harmony with his self-image are to be preferred to rewards that depend on the favor of others. Those teachers who use techniques of conditioning commonly place great reliance on rewards that gratify appetites. They are played down in models of learning that emphasize the development of self-direction, because habitual responses to physical gratification makes a human being more dependent on those who can use force and material power than on those whose importance derives from intellectual or social influence.

There are manifold rewards that a student can obtain from the successful carrying on of the new behavior he is trying to learn. A very important reward for most persons is the approval of peers, especially friends. Usually more than one kind of satisfaction from accomplishing the learning task can be provided, and seeing that these rewards are obtained is an important feature of teaching, that is, of guiding learning.

Feedback and Encouragement

Some students will have difficulty and may not carry on the desired behavior satisfactorily. To reward their efforts would result in their learning the wrong things. They need to be informed that their behavior is not satisfactory and they should get some information about what the difficulty seems to be. This is commonly called "feedback." Then he needs to be encouraged to try again either the same learning task or another one that may be more appropriate for his present stage of learning. By the help of "feedback" and encouragement, a major fraction of students having difficulty with a learning task successfully complete it on the second or third attempt. This is the basis for "mastery learning."

Opportunities for Practice

Another important condition for effective learning is the availability of opportunities for practicing the new behavior until it becomes part of his usual repertoire. Availability of opportunities means that there are many chances to carry on the behavior and also that the student has time for the necessary practice. Too often, students spend most of their time in school passively while the teacher performs, rather than actively engaging in the thinking, feeling, and acting that they are expected to learn. Daily, weekly, and yearly school schedules need thorough reconstruction to furnish time for complex learning required for responsible human living.

Another aspect of opportunities for practice is that they should be sequential. Sequential practice means that each subsequent practice goes more broadly or more deeply than the previous one. Sheer repetition is quickly boring to the learner and has little or no further effect. Only as each new practice requires him to give attention to it, because of new elements in it, does it serve adequately as a basis for effective learning. This is important for the student in gaining understanding, because it means that concepts and principles are brought in again and again, but each time in new and more complex illustrations so that the student continually has to think through the way in which these concepts or principles help to explain or to analyze the situation. In developing a skill, it is important to see to it that each new practice of the skill provides opportunities for greater variety or complexity in its use. Sequence is also important in the development of appreciation, for it means that each new work of art should be demanding something more of perception and be providing opportunity for a greater variety and depth of emotional response. The importance of opportunities for sequential practice could also be illustrated with the learning of new attitudes, interests, problem-solving—in fact, of all kinds of complex behavior. This principle is too often neglected both in classroom activities and in out-of-class assignments.

One current example of oversight regarding sequential practice is in the textbook materials for the middle grades. In the past, the curriculum in reading for the primary grades was designed to enable children to gain the basic skills of reading and of word attack, which they would then employ in the subject fields of the middle grades. As they used the skills, the reading materials in social studies, science and other subects would present an increasing range of vocabulary, complexity of syntax and of concepts. Now, however, the schools are demanding textbook materials for the fifth grades at the third grade reading level and for the sixth grade at the fourth grade reading level. This appears to account for the fact that the National Assessment and Achievement test results show that nine year olds have improved in reading but there are declines in the scores of children in the middle grades. The need for reading materials that furnish opportunities for sequential practice seems to have been overlooked.

Transfer

Obtaining transfer has always been a matter of potential difficulty in guiding learning. Schools are established to help students to learn things that they will use in the various situations they encounter both in and out of school. Some students learn things in school but rarely, if ever, do they use them outside. To overcome this lack of transfer, many students need opportunities to practice outside of school while they are learning. Various ways are used by teachers to furnish these opportunities. For example, children learning to read may be encouraged with cooperation of parents to read to the family at home. Arithmetic problems from home, or playground, may be brought to the school for the class to solve. Students learning to write may take turns in ordering supplies, writing thank-you letters, writing to a sick friend. Students can be encouraged to bring to class various kinds of curious phenomena they have observed or various social problems they are facing using these as examples for practice in developing understanding and problem-solving. Stimulation, that is the construction of artificial situations like those the students encounter are frequently employed in some subjects. The important principle of learning is to assure transfer by having students use what they are learning in a variety of circumstances, and bringing to their attention the ways in which what is being learned can be used and how helpful it is.

This is a brief description of the process of complex human learning and the conditions required for the student to learn effectively and efficiently. Keeping this general picture in mind, one can examine some of the particular questions about school learning that frequently arise.

Conditioning and Other Forms of Learning

Behavior modification is the popular term today for conditioning, and it is being recommended as a major means for learning in correctional institutions, in programs for retarded children, and for establishing discipline in the classroom. Since this form of learning is in some respects quite different from self-directed complex learning, it deserves special examination. The term "conditioning" is commonly used to refer to the learning of a behavior which is initiated by a clear stimulus and consists of an automatic fixed response. Most of the behavior of a driver of a car represents conditioned responses to traffic lights, to the approach of other cars and pedestrians, and to the sensations that he receives from the car's movements. To be a good driver, he must respond swiftly to stimuli that present themselves suddenly, and he has no time to view the traffic scene from various perspectives and to analyze the several traffic problems that might be identified. For most people, habits of cleanliness, of eating, of punctuality, are conditioned responses. The way we respond to authority, to brothers and sisters, to strangers, includes a large component of conditioning. The demands on a man for reactions in modern society are so great that he would soon perish if each one had be examined, analyzed, and dealt with in a problem-solving way. Hence, conditioning is a necessary and important type of learning. An attempt to eliminate it altogether in an educational system would be disastrous. It fails, however, when it furnishes an automatic response where such a reaction is inappropriate. The problem is to identify the situations where conditioning is essential or at least helpful and the other situations, where a fixed response is not only essential but where it would lead to the destruction of the species or the denial of significant opportunities for man's fuller development.

How can one make the distinction? It can be made only as an approximate adaptation to the present and foreseeable situations. Habits of eating, sleeping, exercise, speaking, obedience to accepted rules, coding and decoding stylized symbols are likely to be seen as requiring automatic responses, so that conditioning is a proper means of learning. However, we recognize that our society is undergoing continuing change, and we can conceive of the possibility that some of these types of behavior will requre re-examination and the formation of new patterns. That is, human education seeks to help the student understand human behavior, particularly his own, and to be able to choose new learning objectives and to work on their attainment. In this way, each generation has a means for re-examination and self-renewal of even basic habitual reactions.

The inadequacy of conditioned responses arises from the changing environment, which requires new human behavior patterns for coping with these changes; the increasing understanding of the world and of man, which opens new possibilities for men to achieve their aspirations by effective utilization of the new knowledge; and greater acceptance of the ideal of the brotherhood of man and a world of greater equality of opportunity, the attainment of which requires new attitudes, skills, and deeper understanding. Conditioned response-learning does not furnish a model to guide education that enables men to deal with a changing environment, to gain and use new knowledge, and to form and strengthen new relationships of man and society. These more general and dynamic goals are attainable through the more complex model outlined earlier.

Formulating Learning Objectives

As educators have come to recognize that learning is acquiring new patterns of behavior, they have generally discarded the notion that a student simply stores up knowledge in some part of his brain, and they are increasingly stating learning objectives in terms of behavior. But many current statements of learning objectives are limited to "recalling" facts and "basic skills." Thus, an objective may be stated: "Can give four reasons for the outbreak of the Civil War," or another may be: "Can add correctly two whole numbers whose sum is less than 10."

Human beings can learn much more than simply to recall facts or to perform simple operations skillfully. They can learn to understand complex phenomena, that is they can explain the phenomena in terms of elements that are involved in it; they can predict the consequences. These behaviors are more complex than mere rote memorization. Human beings can also learn complex skills, such as those involved in interpretation of literature. They can learn new attitudes, new interests, and new values. Many teachers sense the variety of possible learning objectives but are not clear about how some of them are learned.

Developing Values as an Objective

The development of values is an illustration of important learning that is usually discussed in very vague terms. This vagueness is not necessary. We know something of the process. Human beings develop their values from all their experiences that seem important to them. What one finds enjoyable, or believes to be deeply satisfying, is valued, and its pursuit directs or strongly influences his actions. Material objects, like food, drink, possessions, money, are valued when he finds enjoyment in them. He may also find certain kinds of activities enjoyable, such as athletics, singing, reading, talking with friends, and come to value these activites. He may also find the acqusition of knowledge and understanding deeply satisfying and come to value this. As he develops a conception of what kind of person he would like to be, living up to this self-image is satisfying and valued. In brief, every human being has a very large range of potential objects, activities, relationships with people, and ways of behaving that he may learn to value, and thus they become his values.

But it should also be noted that one often finds his values in conflict in particular situations. Then the attainment of one value is at the expense of another. For example, if the child keeps the basketball the whole play period, he gains the satisfaction of the activity, but he may lose the friendship of the boy next door who wants to share in the play. Or, if he "swipes" the pen from the teacher's desk he gains the value of possessing an attractive object but he loses the satisfaction of living up to his self-image. Hence, in developing a set of personal values, one is forced to develop a hierarchy or priority among one's values.

Note also that the development of a set of values results both from one's direct experiences—such as a child may have in the family, with playmates, and with the teacher—and the relative satisfactions they provide, and from observing persons who seem attractive and seeing what appears to be their hierarchy of values. Observing other persons includes not only those the child can see directly but also vicarious observations, that is, what he perceives through reading, TV, radio, and other means of communication.

In the past, most children's social values have been developed initially in the home, and in their experiences with others. Now TV has a strong influence, even in the early years of life. The value children attach to unselfish sharing with others in contrast to selfishness is already obvious when they enter school. But the experience in the school and outside the home can have a marked influence in their finding other values that are satisfying, such as gaining understanding, singing, reading, working with others, serving others. The school experiences can also help them modify some of their priorities. The teacher's role is not only to help provide experiences where these activities can be enjoyed, but also to help children perceive that these activities are enjoyable and help them find and use standards for establishing priorities among competing values.

This discussion of what is involved in value development is more detailed than may be necessary, but the vagueness about this subject in current discussions indicates some need for clarification. Values and other educational aims that are somewhat vague in the minds of educators need to be defined more clearly in order for teachers to understand what kinds of behavior students can be helped to acquire and how to do it.

Specificity and Generality of Objective

There is danger that the demand for clarity will be interpreted as a demand for specificity. Most educational aims are generalized behavior patterns, not specific ones. To learn to value unselfishness in my dealings with others does not require me to establish a specific objective for every kind of "others." As I find unselfishness in dealing with family, friends, old, young, rich, poor, persons from many backgrounds, I generalize the value and seek to be unselfish in all my human relations. Human beings are capable of generalizing as they gain experience with a variety of specifics. In a study I conducted in 1927, I found that young children could generalize the concept of addition from 21 concrete examples and could add accurately 79 other examples that they had not practiced before. Learning objectives should be formulated at the level of generality that the students are able to handle. They should be clear but not highly specific.

This point needs emphasis because of the misinterpretation of the concept of behavioral objectives. Many educators interpret it as *overt specific* behavior. Much of the behavior the school seeks to develop is not overt. It cannot be seen. It is mental and emotional, and has to be inferred from the statements and the actions of the learners. Furthermore, the school seeks to develop students who are able to generalize and be guided by principles rather than by specific rules or habits. The educational objectives should be formulated in accordance with these considerations, seeking to define in appropriately general terms the mental, emotional and physical behavior the school seeks to help students learn.

Learning an Active Process

Although most educators now speak of learning as an active process and no longer believe that a child is an empty bucket to be filled by the wisdom of the teacher and the textbook, they sometimes overlook the fact that not only is a student active if he is learning, but it is the activity that he carries on that he is learning. If he simply listens or reads and tries to remember what he is reading or hearing, he may be learning how to memorize, but he is not learning how to use the information. If he is to learn how to use arithmetic in solving quantitative problems he must have practice in this use. If he is to learn to apply scientific principles in explaining the energy cycle he must have practice in applying principles to natural phenomena in his environment. It is the behavior he carries on that he learns, not the behavior of the teacher. The teacher cannot learn for the student. He can stimulate the student to activity, he can guide the activity, reward and encourage it, but the student's behavior is the core of learning.

The common classification of teaching methods into such categories as textbook, lecture, laboratory, audiovisual, is a classification of ways of presenting material which is only a part of the teacher's task in stimulating and guiding learning. This concentration of attention to the presenting part of teaching inhibts rather than encourages recognition of the student's active role in learning.

Teaching is a Human Service

The foregoing analysis of the conditions required for effective learning indicates that stimulating and guiding learning is usually not a mechanical process, but a human service. Technological devices can aid the teacher but the problems of motivation, clarification of the learning objective, encouragement of the learner to undertake initial learning tasks, the management of rewards, the transfer of learning are rarely, if ever, covered by technological devices. The notion sometimes expressed, that technology will take over the teaching functions, is not based on an adequate understanding of the conditions required for complex learning. The same can be said for the notion of constructing a teacher-proof curriculum. The improvement of learning requires the understanding, interest and efforts of teachers.

Structure in Learning Experiences

There is much discussion among educators about "the open classroom" and "structure" in learning. John Dewey spoke of this issue when he stated that a constructive learning experience was one in which there was a balance between constraints that the learner could not change and opportunities for his own individual expression. In such an experience, the student must learn how to modify his behavior to fit the conditions outside of his control and have opportunity to be creative in respect to those aspects of the experience which are open.

Dewey said: "If a learner has no freedom to respond creatively, but must modify his behavior in every respect to meet inflexible external constraints, he can only conform or rebel. This is slavery. If there are no constraints and no requirement for the learner to modify his behavior to fit in with them, he has no guide but his impulses. This is whimsy."

This criterion is also useful in examining the constraints and the freedom in the total environment of the student. Not long ago I visted two schools that were following what they called the "open classroom" practice. One of them was a parochial school enrolling children from working class families. I was told that the parents were relatively strict and inflexible in their child-rearing practices. Strict discipline was expected and enforced. In the school, there was little apparent structure and children were given a good deal of freedom in the particular assignments they undertook and the ways in which they would work on them. As I observed the classrooms, the children were busy, apparently happy and, as I talked with them, I found they usually understood what they were doing, why they were doing it, and what they expected to accomplish.

The other school enrolled children from an impoverished area, who came largely from families with only one parent, and many were living on welfare payments. The students were milling about in the open classroom, and did not appear to be at work. When I talked with them, few seemed to know what they were to do. It suggested to me that in the first school, the open classroom was a welcome contrast to the inflexible structure of the home, while in the second school, the children had little or no structure at home around which to organize their lives. The lack of structure in the school did not help their development but seemed to accentuate their aimlessness. Balance is important in learning experiences.

The Total Educational System

When we consider the responsibility of the school and the role of the teacher in promoting constructive human learning, we must recognize that the educational system through which a young person learns the things required to participiate in our modern industrialized society includes much more than the school. What he experiences in the home, in his social activities in the community, in the chores and jobs he carries on, in the religious institutions where he participates, in his reading, in his listening to radio and viewing of TV, and in the school—all are included in the actual educational system through which he acquires his knowledge and ideas, his skills and habits, his attitudes and interests, and his basic values. The school is an important part of this educational system in furnishing the opportunity to learn to read, write and compute, and to discover and use the sources of facts, principles and ideas that are more accurate, balanced and comprehensive than are provided in most homes, work places or other social institutions. The school also supplements and complements learning furnished by the other institutions, and is usually an environment which more nearly represents the American social ideals that the larger society. In most schools, each student is respected as a human being without discrimination, the transactions in the classroom are guided by an attempt to be fair and dispense justice, and the class morale is a reflection of the fact that the members care about the welfare of others.

In the past, experiences in the home, the work situation, and the school have made somewhat different contributions to the development of American youth. Most young people have acquired their basic habits of orderliness, punctuality, and attention to work primarily through experiences in the home and in work settings, with helpful supplementation by the school's regimen.

They have developed their values from all their experiences that have seemed significant to them. Social values are essential to a democratic citizen, and they are developed from experiences outside the school as well as within it.

There are other important attitudes in addition to social-civic ones. Attitudes toward productivity and some of the basic working skills have, in the past, been learned by young people through participation in family chores, and in the part-time jobs in which they commonly worked under close supervision, with critical appraisals made of their efforts; for example, mowing lawns, shoveling snow, preparing meals, doing laundry, carrying newspapers, and working in stores and shops. Productivity in working on school assignments does not impress young people as having the same social importance as productivity in doing chores and working on other jobs. Developing an interest in productivity, and the desire to be productive, are important in the education of youth for constructive work roles but they have not been chiefly acquired through school experiences.

Learning to take responsibility for a task and accepting the consequences of success and failure in performing it are other important aspects of education for adult roles not primarily learned in school. Responsibility for doing one's school assignments does not have the same meaning for a young person as being responsible for work directly affecting others, the consequences of which will be judged by others. Adolescents commonly vacillate between the desire to take large responsibilities and the fear of failure. Hence, learning to take responsibility and to bear the consequences requires considerable experience, with gradual increase in the degree of responsibility and in the seriousness of the consequences of failure paralleling the increase in the competence and confidence of the youth. The school alone can contribute only a minor range of learning experiences for this purpose. Situations which are clearly real and adult-like as perceived by young people are necessary. This means that the opportunities must be furnished in business, industry, agriculture, health agencies, civil service, social agencies, and the like: the institutions in the community where adults take responsibility and where real consequences follow. The school can help to find these opportunities for youth, can help to organize them for effective and sequential learning and to supervise them to assure that educational values are being attained, but the school alone has very limited capabilities for educating youth in this important area.

The school can also contribute to the development of social skills that are essential to civic life, to home living and to effective work in service occupations and in group settings in all vocations. Schools are societies in microcosm where children and youth communicate, cooperate and compete, and generally carry on their transactions without serious conflict or the arousal of intense antagonism. Opinion polls of youth report that they are generally well satisfied with the social environment of their schools. Most schools appear to contribute postively to the development of the kind of social skills essntial to many kinds of adult situations.

In educational systems of the past, the several parts have certain interdependent features. The student's interest in what the school sought to teach was usually stimulated in other parts of the system—in the home, in the working place, and in the social life of the community—so that the school did not need to develop particular motivation for learning on the part of the majority of students. Furthermore, as skills in reading, writing and arithmetic were developed in the school, the student found many opportunities for their use in his activities outside the school, particularly in work and in recreation. Skills quickly become inoperative when their use is infrequent. If the only reading required of youth is that assigned in school, reading skills do not reach a mature level. If writing is limited to an occasional note or letter, writing skills remain very primitive. If arithmetic is not used in such home activities as consumer buying, furniture construction, and budgeting, or in outside work, arthmetic skills and problem-solving are likely to be haphazard. Hence, the total educational system needs to be viewed as one in which practice as well as initial learning is provided.

The main point to be made is that the educational system is more than the school system. In the recent period of rapid social change, the educational roles of the home, the community, the religious institutions and employment have been greatly changed. Generally, they have been reduced. Only the school is maintaining approximately the same role with the same amount of time annually for its work with children and youth. The time lost in these kinds of experiences has largely been taken up by TV. Schramm and Parker report that the average American child between the ages of 10 and 14 spends about 1,500 hours per year viewing TV and only about 1,100 hours per year in school. As the educational expectations of the public do not seem to be realized in the performance of youth, the common opinion seems to be that the schools have failed, rather than recognizing that the non-school part of an educational system has been seriously eroded.

Since we know how important the non-school environment is in the learning of children and youth, its erosion creates a serious problem. It seems to me important that school leaders not only work to improve learning in the schools, but also to encourage the rebuilding of the learning environment outside the school so that the total educational system can function effectively in meeting the tremendous educational demands of today.

Chapter II

CONTINUITY IN LEARNING LONG-RANGE EFFECTS

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Many experiments of human learning have been conducted over short time intervals. The results of these experiments show that the amount of learning is maximum under four conditions: The individual actively engages in the learning task; the learning task is of an appropriate level of difficulty for the individual; the amount of time spent in the learning session is neither too little nor too great; and there is proper guidance of the learner. To get the maximum amount of learning over long time intervals, such as during the school years, kindergarten through high school, the preceding conditions must be operative on a daily basis and there must be continuity across the learning sessions over extended periods of time. We may infer that teachers, curriculm coordinators, and other school personnel in our local schools are attempting to attain the short-term conditions and also to provide continuity across the days, weeks, months, and years of schooling. In this effort the local schools have the full cooperation and continuous support of persons in the state education agency.

I should like to describe the course of learning certain outcomes as it occurs with the kind of continuity just described from kindergarten through high school. This description is based on a longitudinal study* carried out in a school district of a city that has a population distributed according to socioeconomic status and race similar to that of the United States. I will also report results of other studies, including some evaluations carried out in schools that practice Individually Guided Education, which indicate that with more effective instructional conditions and continuity, higher student achievement results. The outcomes of learning that were focused on in the

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longitudinal study are concepts, principles, and problem-solving skills; and most of the studies to be reported are directly related to a particular theory of cognitive learning and development. Therefore, before proceeding to the longitudinal study, I shall try to give enough of the flavor of the theory so that the results of the study will be clear.

Concepts, Principles, and Problem-Solving Skills

From a cognitive viewpoint, continuity in learning is reflected in the orderly progressive changes that occur across long periods of time in the cognitive structure of the individual and in the individual's related observable and inferrable behaviors. The cognitive structure of an individual includes all the raw perceptual information, facts, concepts, principles, theories, and strategies for learning and doing that individuals have about themselves and their environments. Thus, the cognitive structure of an individual's changes, and at any point in time includes everything the individual has learned. It is organized hierarchiacally by whatever operations, images, concepts, and principles the individual has been able to acquire to that point in time. The organizational pattern is simultaneously both molecular and molar: the simplest serial and parallel relations between recently perceived events are incuded as well as the most abstract relations. This point of view regarding cognitive structure parallels that of Ausubel and Robinson (1969), and corresponds closely to the concept of "Image" formulated by Miller, Galanter, and Pribram (1960).

Concepts may be regarded as mental constructs of the individual and in this sense are the critical component of a maturing individual's continuously changing, enlarging cognitive structure. A person's concept of the same thing or class of things — objects, events, processes — changes, especially from about age two throughout the formal years of schooling. Concepts held at any point in time provide the basis for interpreting new information and for retrieving what has already been experienced and in this way are the basic tools of thought. Kagan (1966) indicated the importance of concepts as follows:

> The theoretical significance of cognitive concepts (or, if you wish, symbolic mediators) in psychological theory parallels the seminal role of valence in chemistry, gene in biology, or energy in physics. Concepts are viewed as the distillate of sensory experience and the vital link between external inputs and overt behaviors (p. 97).

The word "concept" is used not only to designate mental constructs of individuals but also the societally-accepted meanings of many of the words and other symbols that comprise part of the substance of the various disciplines. A concept thus may be defined formally as organized information about the properites of one or more things—objects, events, or processes—that enables any particular thing or class of things to be differentiated from and also related to other things or classes of things. Carroll (1964) related concepts, words, and word meanings this way: Words in a language can be thought of as a series of spoken or written entities. There are meanings for words that can be considered a standard of communicative behavior that is shared by those who speak a language. Finally, there are concepts—that is, the classes of experiences formed in individuals either independently of language processes or in close dependence on language processes. Putting the three together, Carroll states: "A meaning of a word is, therefore, a societally standardized concept, and when we say that a word stands for or names a concept it is understood that we are speaking of concepts that are shared among members of a speech community" (Carroll, 1964, p. 187).

A principle is a relationship between two or more concepts. Like a concept, a principle serves both as a mental construct of the individual and as the societally accepted meaning of the words, symbols, or statements that represent the principle. Most principles are represented externally in verbal statements. However, the task in learning a principle is not to learn to state the representation of a principle; rather to understand a principle is to be able to use it to predict consequences from known conditions and also to explain new phenomena that are encountered. In this way a principle, like a concept, provides the individual with a powerful tool for interpreting many phenomena and for solving problems.

Four basic types of relations expressed in principles are *cause and effect, correlation, probability,* and *axiomatic*. An example of each of the first three follows:

Tuberculosis is caused by the organism *Myobacterium tuberculosis.* (Cause and effect)

Sample correlations between two sets of scores on standardized reading achievement tests of the same children taken at yearly intervals during the successive elementary school years range from .70 to .90. (Correlation)

The probability of giving birth to a boy during any one pregnancy is .52. (Probability)

Axioms are universally accepted truths or conditions. They represent the largest class of principles. The class of axiomatic relationships may be divided into five subclasses: fundamentals, laws, rules, theorems, and axioms (Bernard, Note 1). What each class of axioms is called varies among disciplines such as mathematics, physics, and psychology.

A problem is experienced when an individual must respond to a situation but does not have available the information, concepts, principles, or strategies to arrive at a solution on a first attempt. To solve any problem the individual must think adaptively; also concepts and principles are instrumental in the solution of problems.

Problem-solving ability is the most important of all outcomes of learning in the cognitive domain inasmuch as a person, when capable of solving problems, can learn independently. Problem-solving techniques are learned and become part of the individual's cognitive structure. General sequences in problem solving have been identified and described by Davis (1973), Dewey (1933), Guilford (1968), Osborne (1963), and Wallas (1926). Although sequences in problem solving have been identified, a literature search failed to locate a single longitudinal study of the development of problem-solving techniques.

Throughout the history of humanity, persons have been adding to their individual and collective knowledge, organizing it, and putting it into communicable forms, primarily symbolic. Three organizational foci for both an individual's cognitive structure and the communicable knowledge of a group who share the same language and cultural experiences are taxonomies, hierarchies, and the structure of knowledge of the various disciplines. Concepts comprise the key building block of these foci of organized knowledge.

While a taxonomy may be considered as a hierarchy, a useful distinction may be made between a taxonomy and a hierarchy. A taxonomy involves inclusive-exclusive relationships among classes of things whereas a hierarchy implies relationships among things ordered by some principle other than inclusiveness, such as of importance, priority, or dependency. The main relationships among classes of things in a taxonomy such as of the plant kingdom and the animal kingdom are supraordinate, subordinate, and coordinate or parallel. Each class of things successively lower in a taxonomy has all the attributes of the supraordinate class and also other attributes that define the particular subordinate class.

One important kind of relationship in a hierarchy is dependency. Gagne's (1970) concept of a learning hierarchy is illustrative. A learning hierarchy is a set of sequentially related skills of the kind in which each preceding skill must be learned before the succeeding one can be.

According to Bruner (1960) the structure of knowledge in a discipline refers to how things of the discipline are related. For example, the structure of knowledge in algebra involves the solution of equations of the unknown, and the ability to solve equations rests upon understanding the principles of commutation, distribution, and association. The structure of language may be thought of as the ways that individual phonemes are organized into morphemes, morphemes into phrases, phrases in the proper sequence to form sentences, and a string of sentences into an utterance.

A Model of Conceptual Learning and Development

How may changes in the cognitive structure be explained? We have formulated a theory which provides a framework for studying the course of cognitive learning throughout the school years and also for studying the learning of concepts, principles, and problem-solving skills across short-time intervals (Klausmeier, 1971; Klausmeier, Ghatala, & Frayer, 1974). Focusing on concepts, we are attempting to identify and explain what is represented in the cognitive structure successively across the developmental years, the mental operations involved in learning concepts, and the instructional conditions that facilitate the learning of concepts and their uses. The theory includes five main propositions, three of which bear directly on the substance of this paper. First, children learn four successively higher levels of the same concepts in an invariant sequence as shown in Figure 1. The four levels are designated concrete, identity, classificatory, and formal.

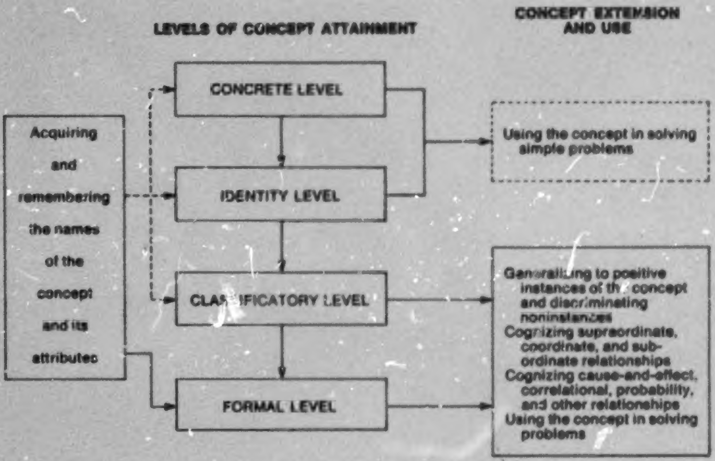

LEVELS OF CONCEPT ATTAINMENT
CONCEPT EXTENSION AND USE
CONCRETE LEVEL
Acquiring and remembering the names of the concept and its attributes
IDENTITY LEVEL
CLASSIFICATORY LEVEL
FORMAL LEVEL
Using the concept in solving simple problems
Generalizing to positive instances of the concept and discriminating noninstances
Cognizing supraordinate, coordinate, and subordinate relationships
Cognizing cause-and-effect, correlational, probability, and other relationships
Using the concept in solving problems

**Figure 1. Levels of concept attainment, extension, an use.
(Klausmeier, Gatala, & Frayer, 1974)**

Attaining a concept at the concrete level is inferred when the individual recognizes an object that has been encountered on a prior occasion. Figure 2 is a test item that measures attainment of equilateral triangle at the concrete level.

Attainment of a concept at the identity level is inferred when the individual recognizes an object as the same one previously encountered when the object is observed from a different spatiotemporal perspective or sensed in a different modality, such as hearing or seeing. Figure 3 is a test item measuring attainment of equilateral triangle at the identity level.

The lowest level of attaining a concept at the classificatory level is inferred when the individual responds to at least two different examples of the same class of objects, events, or actions as equivalent. Individuals are still at the classificatory level when they can correctly classify a large number of instances as examples and others as nonexamples but they cannot define the word that represents the concept and also cannot explain the basis of their classifying in terms of the defining attributes of the concept. Figure 4 is an item measuring attainment at the mature classificatory level. A student who, when given only the form in the left column and only the four figures of the middle row, places an "X" on the equilateral triangle is judged to be at the beginning classificatory level.

Attainment of a concept at the formal level is inferred when the individual can give the name of the concept, can define the concept in terms of its defining attributes, can discriminate and name its defining attributes, and can evaluate actual or verbally described examples and nonexamples of the particular concept in terms of the presence or absence of the defining attributes. Figure 5 indicates how naming a defining attribute is tested.

The rates at which individuals attain the successive levels vary, and not all individuals attain the formal level of many concepts.

Certain mental operations are prerequisite for attaining each given level. One or more new operations are involved at each successively higher level. These new higher level operations are presumed to emerge as a product both of learning and biological maturation, or more broadly, of development. The attainment of any given concept at each successively higher level is explained, not as an additive reception progress, but as a qualitatively different construction process.

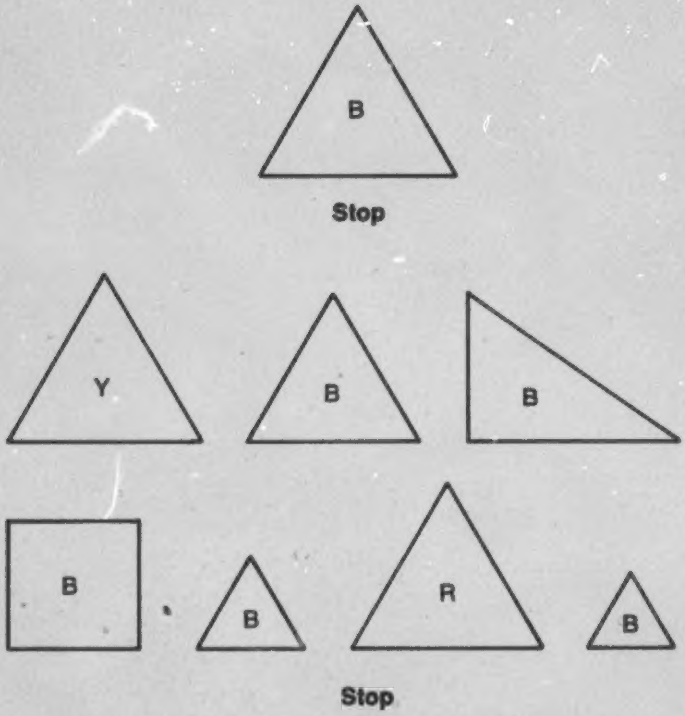


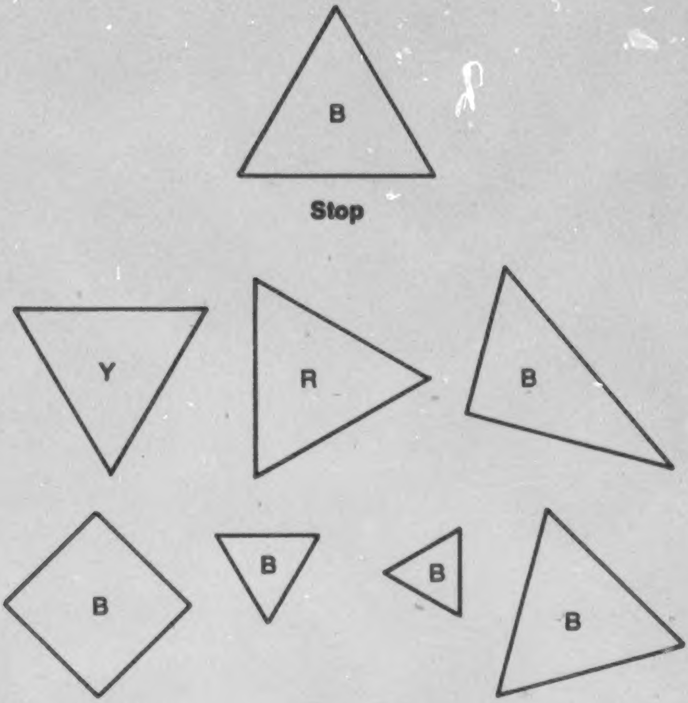
Figure 2. Test item for concrete level: Equilateral Triangle

R = red
B = blue
Y = yellow

Concepts when attained at the successively higher levels are used more effectively in understanding principles of which the concept is a part, in understanding toxonomic and hierarchiacal relationships of which the concept is a part, and in solving problems involving the concept. Figures 6, 7, and 8 are items that test understanding of principles, understanding of taxonomic relations, and problem solving.

Fourth, having the name of given concepts and of their defining attributes facilitates the learning of the concepts at the concrete, identity, and classificatory levels and is essential for learning concepts at the formal level.

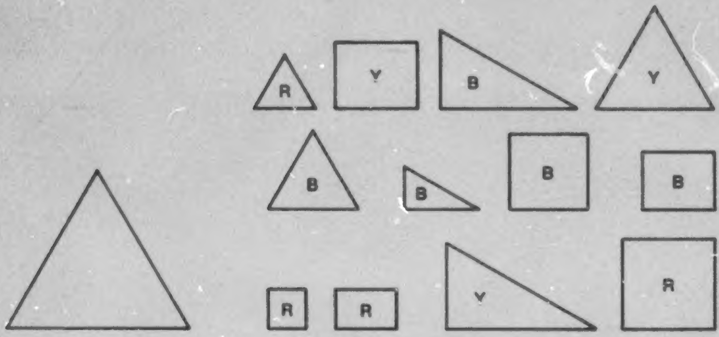
Fifth, the external conditions of learning, including instructional conditions in school settings, that facilitate attainment of each level differ according to the levels and are necessarily directed toward utilization of the operations essential for attaining the particular level (Klausmeier, in press; Klausmeier, Ghatala, & Frayer, 1974).



Stop

Figure 3. Test item for identity level: Equilateral triangle.

R = red
B = blue
Y = yellow

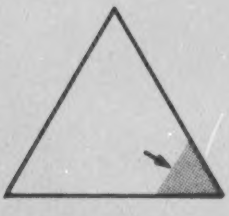

Put an X on the drawing on the right that have exactly the same shape as the.one on the left.

Stop

Figure 4. Test item for classificatory level: Equilateral triangle.

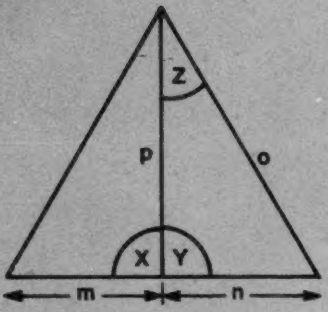
R = red
B = blue
Y = yellow

The proposition that a concept is attained at the four successive levels applies only to those concepts that: (a) have more than one example, (b) have observable examples or representations of examples that are observable, and (c) are defined in terms of attributes. Not all concepts are of this kind. Some concepts have only one example, e.g., the earth's *moon*. Some do not have observable examples, e.g., *atom, eternity, soul*. Still others are defined in terms of a single dimension; e.g., *rough, thin,* or in terms of a relationship, e.g., *south, between, above*. Certain levels are, however, applicable to these kinds of concepts. For example, the identity level is applicable to concepts that have either one example or identical examples; the classificatory level is applicable to concepts of only one dimension or


What is the one word that *best* indicates what the arrow is pointing at?

a. angle
b. line
c. side
d. base
e. I don't know.

Figure 5. Test item for defining atribute: Equilateral triangle.

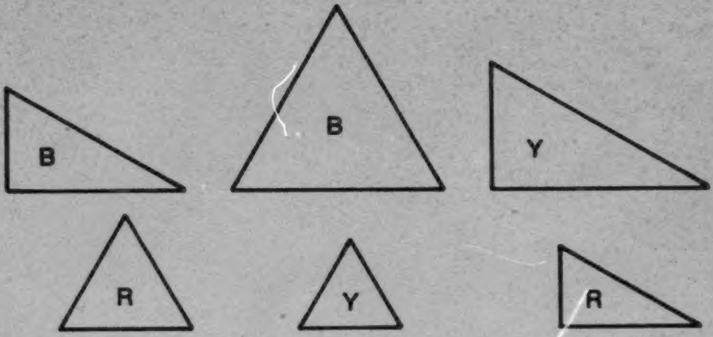


Line p bisects the upper angle of this equilateral triangle.
Angle X is __________ angle Y.

a. larger than
b. shorter than
c. equal to
d. It is impossible to tell without measuring.
e. I don't know.

Figure 6. Test item for understanding of principles: Equilateral triangle.

that express a relationship; and the formal level is applicable to those concepts that have no observabe, classifiable examples. The concepts used in the longitudinal study to be reported later necessarily meet the criteria as stated in (a), (b), and (c), since the interest is in children's long-term development of the same concepts, kindergarten through high school. One cannot readily study concept learning at the concrete and identity levels in

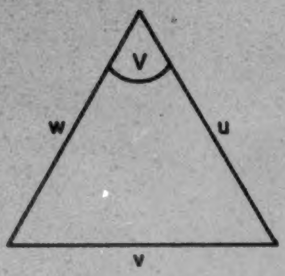


Are all of the three-sided figures above equilateral triangles?

a. Yes, all of them are equilateral triangles.
b. No, some of them are not equilateral triangles.
c. No, none of the are equilateral triangles.
d. I don't know.

Figure 7. Test item for understanding of taxonomic relations: Equilateral triangle.

R = red
B = blue
Y = yellow



Sides u, v and w are of equal length. How many degrees are in angle V?

- **a. 60°**
- **b. 90°**
- **c. 120°**
- **d. It is impossible to tell without measuring.**
- **e. I don't know.**

Figure 8. Test item for understanding problem solving: Equilateral triangle.

young children using concepts that have no observable examples. Also, to determine whether or not students have attained concepts at the formal level, concepts must be used, the definitions of which are agreed upon, so that student's performances can be judged as acceptable or unacceptable.

The operations of attending, discriminating, and remembering are involved in attainment at the identity level as they also are at the concrete level. Generalizing is the new operation postulated to emerge as a result of learning and maturation that makes attainment at the identity level possible.

Some psychologists (e.g., Gagne, 1970) treat concepts at the concrete and identity level as discriminations. Piaget (1970) refers to them as object concepts. The critical matter is not what they are called, but to explain the internal and external conditions of concept learning at these two lowest levels.

General Education and Learning Curves

As indicated earlier, our schools attempt to achieve continuity in learning through arranging for desirable conditions of learning during short time intervals and continuity of instruction across long time periods. There are similar curricula for children of about age 5 through 12, corresponding to kindergarten through grade 6 of elementary schooling. Some general education continues after the elementary school years, but elective subjects as well as the required subjects are taken in junior high school and increase in the senior high school. High school ends for most students at about age 18 with graduation. Nearly all children and youth attend school through age 16, and the large majority continue through high school graduation. Learning curves for attaining concepts and using the concepts in understanding principles, understanding taxonomic relations, and solving problems with this kind of continuity in education are now given.

The curves are based on the results of a longitudinal study that started in 1972-73 with 50 boys and 50 girls each of kindergarten, third, sixth, and ninth grade. The last data gathering occurred in May of 1975 and 1976. The curves represent the mean scores for all the boys and girls. The design of the study is shown in Table 1.

In order to measure the achievements attained by the children, kindergarten through high school, scaled batteries were constructed for each of the following four concepts drawn from different subject fields: *equilateral triangle* (Klausmeier, Ingison, Sipple, & Katzenmeyer, Note 2), *noun* (Klausmeier, Ingison, Sipple, & Katzenmeyer, Note 3), *tree* Klausmeier, Marliave, Katzenmeyer, & Sipple, Note 4), and *cutting tool* (Klausmeier, Bernard, Katzenmeyer, & Sipple, Note 5). Each battery has seven subtests, one for each of the four levels and one for each of three uses of concepts. The subtests provide interval scores; the test scores may also then be used to determine whether an individual has mastered or not mastered each level and each use.

Figure 9 shows the results related to *equilateral triangle* (Klausmeier, Allen, Sipple, & White, Note 6; Klausmeier, Allen, Sipple, & White, Note 7;

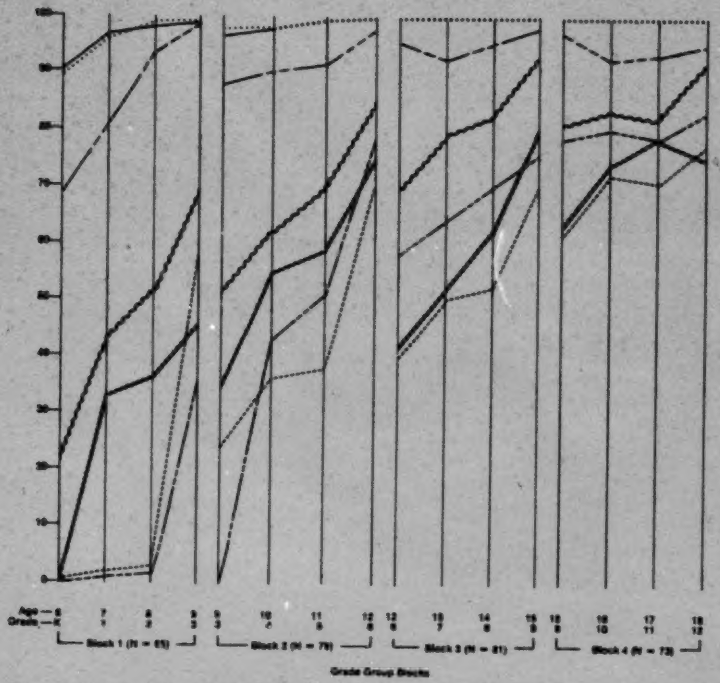


Figure 9. Learning curves for longitudinal study: Equilateral triangle.

——— Concrete
····· Identity
••••• (Concrete and Identity)
– — – Classificatory
〰〰 Formal (including 7 vocabulary items and and 3 discriminating attributes items)
〰〰 Supraordinate-Subordinate
–––– Principle
----- Problem Solving

Klausmeier, Sipple, & Allen, Note 8; Klausmeier, Sipple, & Allen, Note 9; Klausmeier, Sipple, Allen, & White, Note 10).

The precent of items answered correctly by four grade groups, or blocks, of students are shown for the four levels of the concept and three uses of the concept. The kindergarten children already scored about 90 percent correct at the concrete and identity levels. Some increase in both levels occurred across the 36 month period from kindergarten to third grade, at which time the students' mean score was nearly 100 percent.

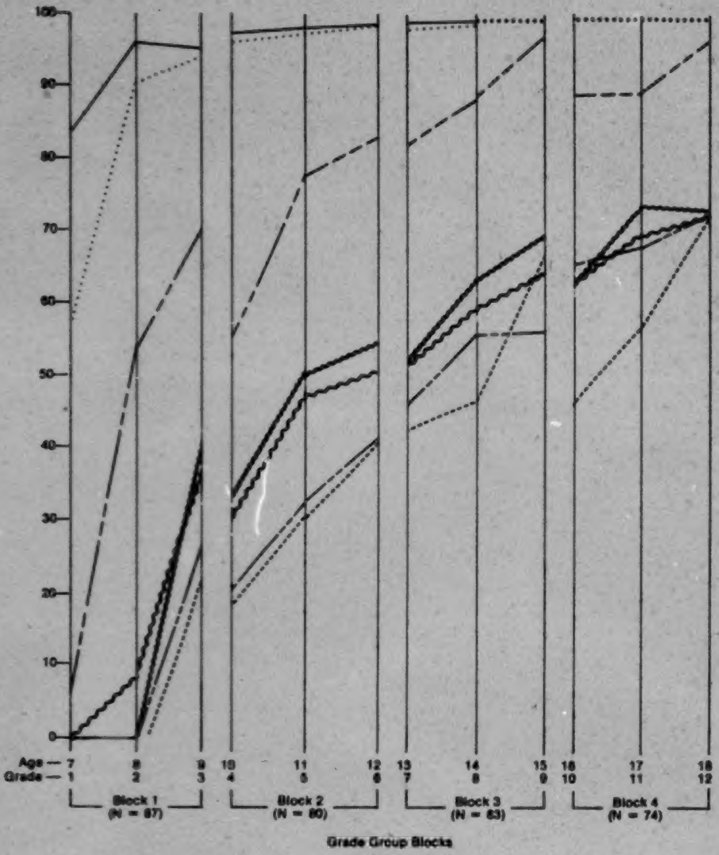


Figure 10. Learning curves for longitudinal study: Noun.

—— Concrete
······ Identity
•••••• (Concrete and Identity)
— — — Classificatory
〰〰 Formal
〰〰 Supraordinate-Subordinate
•—— Principle
------ Problem Solving
—— Three Concept Uses

The kindergarten children scored about 68 percent at the classificatory level. A marked increase occurred at the classificatory level until grade 3, at which time the mean percent correct was about 97 percent. Not until grade 5 was it practically 100 percent. The causes of the unexpected minor

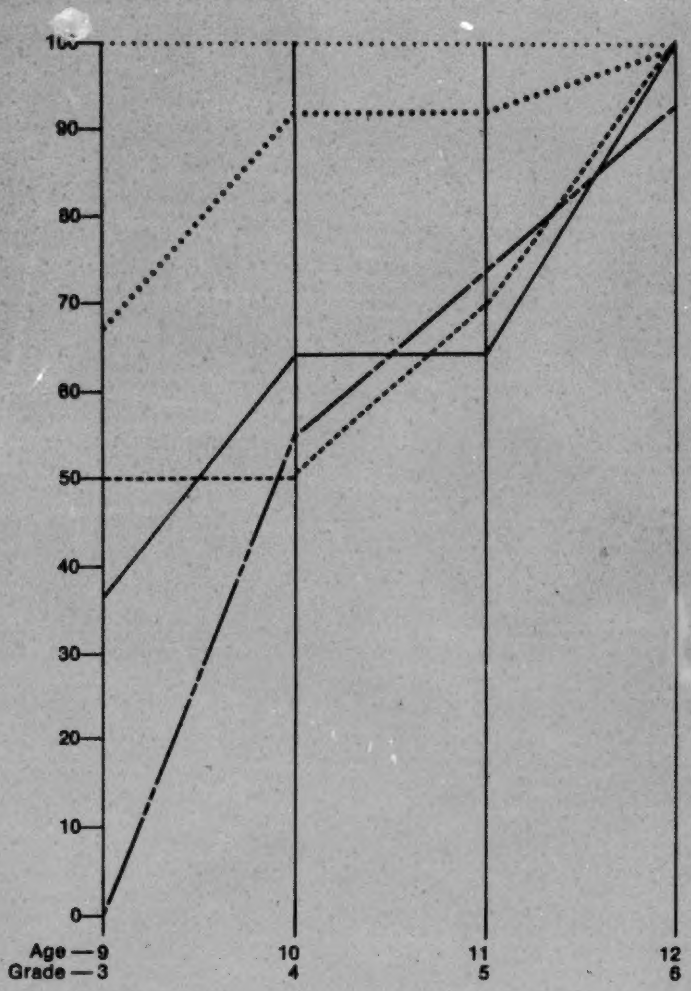


Figure 11. Learning curves for a rapid developer: Grade six.

····· Concrete, Identity, and Classificatory
••••• Formal
——— Supraordinate-Subordinate
– – — Principle
------ Problem Solving

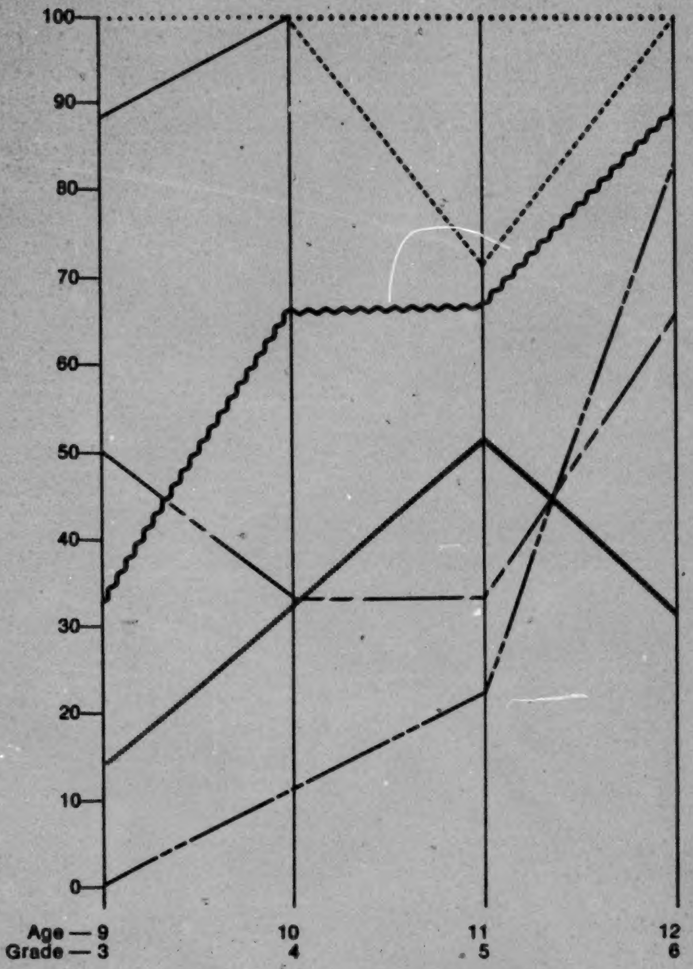


Figure 12. Learning curves for a slow developer: Grade 6.

······ Concrete and Classificatory
•••••• Concrete and Identity
——— Identity
------ Classificatory
∿∿∿ Formal
— - — - Supra-Subordinate
– – – Principle
═══ Problem Solving

variations occurring at the classificatory level for the three upper grade group blocks are being studied.

The kindergarten children scored about 22 percent correct at the formal level. The rate of increase thereafter is very sharp and gradually decelerating

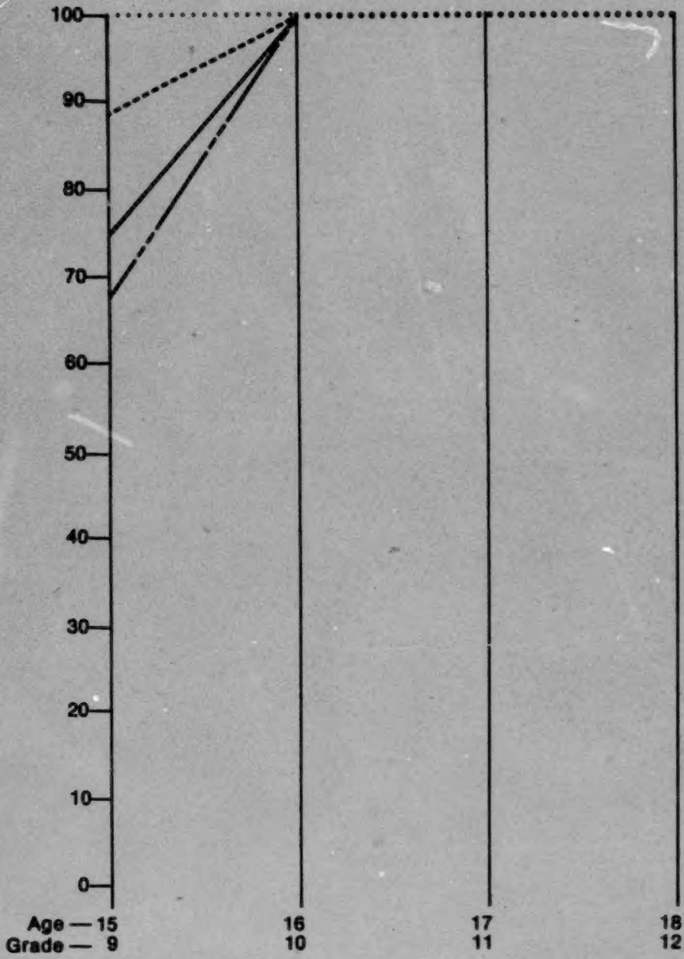


Figure 13. Learning curves for a rapid developer: Grade 12.

······ Concrete, Identity, Classificatory, and Principle
•••••• Concrete, Identity, Classificatory, Formal, Supraordinate-Subordinate, Principle, and Problem Solving
——— Formal
------ Supraordinate-Subordinate
—–– Problem Solving

through grade 9, at which time the mean percent is about 90 percent. There is no increase thereafter through grade 12.

All three uses of the concept in understanding principles and taxonomic relations, and in solving problems followed after attainment of the formal

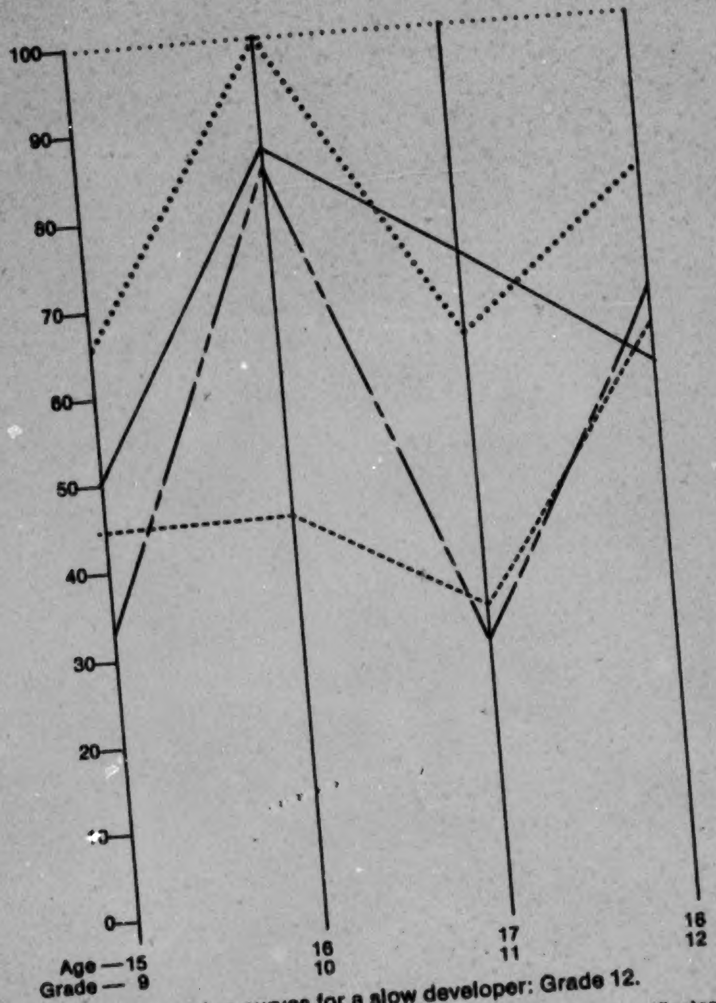


Figure 14. Learning curves for a slow developer: Grade 12.

..... Concrete, Identity, and Classificatory
••••• Formal
—— Supraordinate-Subordinate
----- Principle
.—— Problem Solving

level. The understanding of taxonomic relations and of principles preceded problem solving except for minor variations.

We notice that the successive blocks of students scored somewhat higher at the end of the study than did the original group starting the study. At this

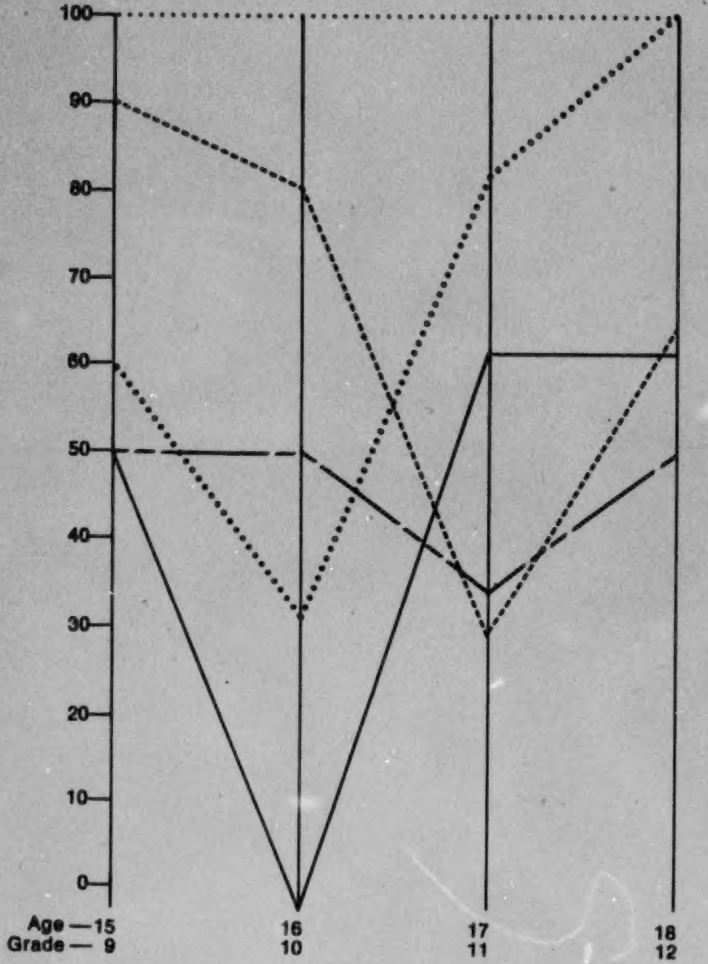


Figure 15. Learning curves for a second slow developer: Grade 12.

...... Concrete, Identity, and Classificatory
•••••• Formal
——— Supraordinate-Subordinate
------ Principle
– — - Problem Solving

Table 1

Sampling Design of Longitudinal Study

Time of Measurement			
1973	1974	1975	1976
N = 100 Age 6 (Kindergarten)	Age 7 (1st Grade)	Age 8 (2nd Grade)	Age 9 (3rd Grade)
N = 100 Age 9 (rd Grade)	Age 10 (4th Grade)	Age 11 (5th Grade)	Age 12 (6th Grade)
N = 100 Age 12 (6th Grade)	Age 13 (7th Grade)	Age 14 (8th Grade)	Age 15 (9th Grade)
N = 100 Age 15 (9th Grade)	Age 16 (10th Grade)	Age 17 (11th Grade)	Age 18 (12th Grade)

time we believe that the higher scores represent in part a real increase in learning and in part the cumulative effects of repeated testing.

Figure 10, dealing with *noun*, shows the learning curves across 24 months. Data collection started here one year later than for *equilateral triangle*. The curves show a more regular pattern than that for *equilateral triangle*. All four levels and the three uses of *noun* are achieved later than those of *equilateral triangle*. The most probable cause for this is that the examples and nonexamples of *noun* are more difficult to experience than are those for *equilateral triangle*.

How would the course of cognitive learning as represented in the observed curves for *equilateral triangle* and *noun* be affected by the cessation of instruction in the related curricular area or by low student achievement indicating lack of learning? This question cannot be answered from the data presented. However, some inferences can be drawn from case studies of students in the longitudinal study and from experiments conducted in school settings.

Case Studies

During the course of the longitudinal study we have observed students who are developing very slowly and very rapidly in the cognitive domain. We are trying to identify the conditions in the personal, home, neighborhood, and school life of children that may contribute to rapid and slow development and also then to identify possible preventable and remediable conditions for slow developers.

Figures 11 and 12 show the learning curves related to equilateral triangle for a rapid-developing sixth-grade girl and a slow-developing one. By the end of the sixth grade, the rapid developer scores 100 percent on all the levels and uses except for principles. The slow developer is at 100 percent for all the levels except formal and the uses are at about 33 percent, 63 percent, and 82 percent. There are few dips in the slow developer's pattern which are not found in the rapid developer.

Figures 13 and 14 show the curves for a rapid-developing twelfth-grade boy and a slow-developing twelfth-grade boy. By the end of grade 10 the rapid developer scored 100 percent on all the levels and uses and maintained those scores. The slow developer continued to progress from grade 9 to grade 10, but then decline started related to understanding supraordinate-subordinate relations and problem solving. By the end of grade 12 the slow-developing boy was far below the rapid-developing sixth-grade girl. Figure 15 shows the same pattern of erratic performance and low performance in another slow-developer in Grade 12.

An indication of a possible contributor to the high performance of the rapid developer in grade 12 may be inferred from Table 2, which shows the courses taken and the grades made during the last six years of school. Algebra started in grade 8 and some work in mathematics followed in each year thereafter.

Table 2

Courses Taken by Rapid Developer: Grade 12

Grade 7			*Grade 8*	
English	A		English +	A
Math	A		Science	B
Science	A		Social Studies	B
Social Studies	A		Physical Education	A
Physical Education	B		Algebra	B
Industrial Arts	B		Industrial Arts	A
Art	B		Band	B
Band	A			
General Music +	B			
Grade 9			*Grade 10*	
English	C		English	A−
Algebra 2	A−		Geometry	A
Biology	B		Chemistry	A−
World Civilization	B+		Physical Education	A
Physical Education	A		Spanish I	B−
Band	B		Personal Typing	B
			Drivers Education	A
Grade 11			*Grade 12*	
English Forensics	A−		English Sport	B+
English—Man in Search		A	Business World English	A
English—Man and his World		A	College Algebra	A
English—Writing it Right		A−	Analytic Geometry	A−
Physics	B	A	Advance Physical Science	B
Trigonometry	B		Advanced Chemistry	A−
American Civics	A	A	Psychology	A
Physical Education	S	S	Heroes	A
Spanish 2	A−	A−	Physical Education	S

Table 3 shows the courses and grades of a slow developer. The school performances of both the rapid developer and the slow developer are much in line with their cognitive growth curves shown in the earlier figures.

Experiments

We have conducted experiments that show when growth in conceptualizing skills stops and also some possible causes of the cessation. The conceptualizing skills and geometry achievements of high-socioeconomic-status children enrolled in Grades 5, 8, and 11 (Wiviott, oNte 11) and of low-socioeconomic-status children enrolled in the same grades (Nelson & Klausmeier, 1974) were studied. In these studies, each student's task was to indicate how the following geometric forms were alike and different: square, rectangle, rhombus, parallelogram, quadrilateral, triangle, circle, and cube.

The students' responses were put into three main categories:

1. Nondefiining Perceptible Attributes: The student renders the items equivalent or different on the basis of immediate phenomenal

Table 3

Courses Taken by Slow Developer: Grade 12

Grade 7	
English	C
Mathematics	C
Science	C
Social Studies	C
Physical Education	C
Physical Education	B
Industrial Arts	C
Speech Arts	C
Art	B
Band	C

Grade 8	
English	B
Mathematics	C
Science	C
Social Studies	B
Physical Education	B
Industrial Arts	C
Band	C

Grade 9	
English	D
General Mathematics	D
World Civics	D
Physical Education	C
Elementary Words	C+
R.O.T.C.	B

Grade 10	
English	D
Biology	C−
Physical Education	C
Art	C
Typing	WF
Cabinet Making	A
Drivers Education	C

Grade 11		
English—Writing It Right	F	
English—Man and His World	F	
English—Business World	D	
English—Mastery of Mystery	F	
Physical Science	D	F
American Civics	F	F
Physical Education	S	S
Carpentry	D	D
Automobile Mechanics	F	F
Drivers Education	S	

Summer School — Grade 11	
Problems in Democracy	D
U. S. History	D

Grade 12		
English—Basics and Spelling	D	
English—Man and His World	F	
English—Death	F	
English—Mastery of Mystery	F	
Advanced General Science		F
Government	D	
Physical Education	S	S
Mythology	F	
Heroes	F	
Metals	D−	F

qualities, such as color, size, shape, or on the basis of position in time or space. For example, the student says, "they are alike because they are both black figures on white cards," "they are both printed in black ink." "they are diamond-shaped."

2. Defining Attributes: The student renders the items equivalent or different by naming a specific attribute of the concept. For example, "they all have four sides," "they are closed figures," "they are made of line segments."

3. Supraordinate-subordinate categories: The student renders the items equivalent or different by giving the name of the supraordinate concept. For example, "they are all parallelograms," "both the square and the rectangle are rectangles," "they are all geometric figures."

A few responses did not fit the preceding categories and were designated fiat. The student merely stated that the items were alike or the same without giving any further information as to the basis of the grouping, even when questioned, for example, "they are alike," "they are just different."

Table 4

Mean Number of Responses in Each Classification Category and Mean Geometry Scores of Students of Low and High Socioeconomic Status

	Low S.E.S.				High S.E.S.			
Grade Level	Perceptible	Attribute	Nominal	Geom. Score	Perceptible	Attribute	Nominal	Geom. Score
5	9.31	5.63	2.72	21.4	5.56	7.38	4.19	33.3
8	7.06	7.16	3.03	28.8	4.00	8.25	5.13	37.9
11	8.03	5.06	3.81	28.4	2.59	9.00	7.09	47.2

The students were also administered a 56-item test of geometric concepts shortly after the experiment was completed. The performances of the students of both low and high socioeconomic status were compared (see Table 4). At all grade levels the students of low socioeconomic status explained likenesses and differences much more on the basis of nondefining perceptible attributes, much less on the basis of membership in supraordinate classes, and they also scored much lower on the geometry test. Strikingly, the fifth-grade students of high socioeconomic status scored higher on the geometry test than all three low socioeconomic groups, including the eleventh-graders, classified more by use of superordinate classes, and classified less on the basis of nondefining perceptible attributes. Equally unexpected, the eleventh-grade students of low socioeconomic status used more nondefining perceptible attributes than did the low eighth-grade students, and they also achieved lower on the geometry test than the eighth-graders. The eleventh-grade students did not show the orderly progression in categorizing skills as found by Olver (1961), Rigney (1962), and also by Wiviott (Note 11).

Further study showed that a change in the mathematics curriculum has occurred recently in the school district where the students of low socioeconomic status were enrolled. None of these eleventh-grade students had received prior instruction in geometry, 41 percent of the eighth-grade students had, and 25 percent of the fifth-graders had. The data were then examined in terms of those who had and had not received instruction, and marked differences in categorizing skills and geometry achievements were found. The perceptible responses of students across grads 5 and 8 who had received instruction in geometry concepts were fewer, while the attribute responses were greater. Thir patterns of categorizing behavior were moving toward those of their high socioeconomic status counterparts.

Apparently a combination of low socioeconomic status and lack of instruction in geometry is associated with immature conceptualizing skills and also with low achievement in geometry. Most important, low socioeconomic-status children who do receive instruction remain at an immature level of conceptualizing, continuing to use the nondefining perceptible attributes rather than the supraordinate-subordinate categories. Thus, it appears that the student's course of study is related not only to the level of concept attainment, but also to the very means of conceptualizing which make the higher achievements possible.

The preceding results from the longitudinal study and the comparative study strongly support the proposition that continuity in instruction in a particular curricular area has a powerful influence on student learning. Without instruction beyond the elementary school years, it is probable that many students will not master the uses of many concepts which are regarded as essential for informed citizenship in an industrialized society. Bruner (1973), after reviewing cross-cultural studies, including those involving Wolof children of Africa, concluded as follows:

> It is always the schooling variable that makes qualitative differences in directions of growth. Wolof children who have been to school are more different intellectually from unschooled children living in the same bush village than they are from city children in the same country or from Mexico City, Anchorage, Alaska or Brookine, Massachusetts. Similar results demonstrating the huge impact of school have emerged from the Belgian Congo and South Africa. (p. 388-389)

Evaluative Studies Conducted in Schools That Practice Individually Guided Education

There is some evidence that we currently have the knowledge and skills to accelerate rate of cognitive growth of children, including those of low socioeconomic status, through more skillfully conducted daily instruction and greater continuity of instruction in the same curricular areas. A few evaluative studies will clarify this assertion.

Several evaluative studies have been conducted in elementary schools that practice Individually Guided Education (IGE). These studies show that when instructional programming of the individual student is implemented properly, student achievement rises. From the rise in student achievement we infer that learning has been more effective. Instructional programming for the individual student calls for teachers to carry out the short-term conditions of learning discussed earlier and also to provide for continuity.

It may be appropriate to review the nature of IGE schooling as developed by myself and my colleagues at the Wisconsin Research and Development Center for Cognitive Learning and cooperating educational groups before dealing with the evaluative studies. Frank Chase, a keen critic of educational innovations, regards IGE as one of the better conceived and more promising of current approaches to the improvement of schools and the enhancement of education. Chase views IGE as a system of interrelated components and also as a strategy, incorporating many tactics, for attaining educational objectives; and when fully implemented, IGE takes on an institutional character as a new kind of school. According to Chase, IGE offers distinctive patterns for the organization and management of instruction and learning environments; it fosters new sets of relationships to other education agencies and to the supporting community; it incorporates coordinated strategies for continuing evaluation, refinement, and renewal; and it stimulates staff development and curricular innovation. Chase finds that IGE stands out as one of the more widely adopted and better implemented of the educational innovations which took shape in the sixties through federally supported educational research and development and believes that IGE has a place among the more constructive of American contributions to the advancement of education.

Chase regards as the most unique aspect of IGE, instructional programming of the individual student in the various curricular areas combined with the new organization of instruction and administration, known as the multiunit organization. Chase indicates that the effective implementation of these related components is what makes IGE potentially more effective than other forms of traditional schooling and also the many varieties of alternative schools.

We now turn to the evaluative studies. Janesville, Wisconsin, is a city that is almost entirely white; the occupations of the parents correspond fairly closely to those of the national pattern, as does the socioeconomic status of the families. The achievements of children after three years in Janesville IGE schools were compared with the achievements of children

Table 5

Mean Percentile Ranks in Various Curricular Areas of Students in IGE Schools and Non-IGE Schools of Janesville, Wisconsin

	2 IGE Schools	2 Non-IGE Control Schools
Reading	59	48
Math	46	36
Spelling	48	42

in non-IGE schools. Table 5 gives total reading scores in mean percentile ranks. The percentile ranks for the students in their third year of IGE schooling was 59, in the two control schools, 48; in total mathematics the percentile ranks were 46 for the IGE schools and 36 for the non-IGE schools; in spelling the ranks were 48 and 42, again favoring the IGE schools.

In Windsor, Connecticut, which is also primarily white, an expected achievement design was employed in the evaluation rather than the use of control schools or other control groups. Eight-year-old students, enrolled in four elementary schools, that were in their third year of IGE were given two standardized tests: a reading achievement test and an aptitude test. The aptitude test was used to derive an expected reading score for each child, and these expected reading scores were compared with the actual scorer. The results are shown in Figure 16. Forty-two percent of the students achieved above expectancy, about 50 percent at expectancy, and only 8 percent below expectancy.

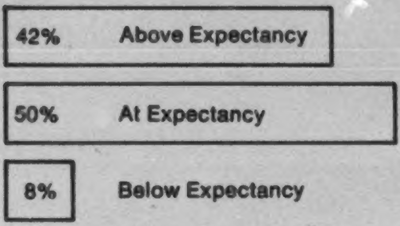


Figure 16. Percent of children achieving above expectancy, at expectancy, and below expectancy in total reading.

The 111th Street Elementary School is in the Watts area of Los Angeles, California, and through 1975-76 enrolled black students almost exclusively. In this school the reading achievement scores have been obtained annually over a period of years. As shown in the notes of Table 6, a systematic attempt at individualizing instruction in reading begain in 1970-71; in 1971-72 IGE was introduced and both instructional programming for the individual student in reading and the multiunit organization were implemented. Remarkable gains in achievement have been made in this school that enrolled children of very low socioeconomic status during the years shown. The younger children particularly are achieving much higher in 1974-75 than in 1969-70, very close to the national average. The older children are not doing so well as the young. There is high turnover of students in this school, 50 percent or more each school year, and the older children, their teachers, or both, appear not to have responded to the changed emphases in instruction as well as the younger children and their teachers.

Table 6

Mean Percentile Scores in Total Reading According to Grade Level Across Years of Schooling

Grade Equivalent	69-70	70-71*	71-72**	71-73	73-74	74-75
1	N[1]	31	44	52	46	48
2	2	46	39	49	47	42
3	11	33	35	43	49	58
4	18	30	36	38	29	30
5	17	37	30	31	29	28
6	9	26	21	28	26	37

*Systematic attempts to individualize instruction started.

**IGE formally introduced with instruction programming for the individual student.

[1] No score available.

Conclusions and Implications

From the preceding results of the longitudinal study, the case studies, the controlled experiments, and the evaluative studies we may infer that with continuity of skillfully conducted instruction across the school years, the rate of learning of many children is excellent and that they are mastering the concepts, principles, and skills that are useful for understanding their physical and social world. On the other hand, many students are not receiving focused, continuous instruction in curricular areas such as English and mathematics, and they are not learning key concepts at the formal level and also the related uses of the concepts in understanding principles and in solving problems. But the principles and problem-solving skills are the high level learning outcomes that are crucial for getting real command of the knowledge of a subject field. High school students whose cognitive growth terminates at the level of elementary schooling will probably not succeed later in any college program that leads to the professions or semiprofessions. Yet our data suggests that if instruction for these students were continued over a longer period of time during the junior and senior high school, they would continue to learn. This is not to say that all students can learn subject matters sufficiently well to succeed in college programs. It does raise serious questions about continuing the practice of having many students discontinue study in the subjects of the so-called college preparatory curricula during the junior high school years.

The evaluative results obtained in IGE elementary schools such as the 111th Street Elementary School of Los Angeles and also the results of the case studies involving white children should help to eliminate some misconceptions about the importance of desegregation as a means of improving achievements of black children. In the all-black 111th Street Elementary School, student achievement in reading started to rise when, systematically, the staff was able to provide better conditions of learning on a daily basis and also good continuity across successive years of schooling. As the earlier case studies showed, students fail to advance cognitively during the senior school years where there is lack of appropriate instruction.

The results also pose serious questions for teachers and others who function as if what and how well a student learns is determined more by heredity than by environmental conditions, including instruction. Our results support Bruner's conclusion that schooling makes a vast difference in how well students learn.

Finally, we might consider who should be taking some actions to initiate more comprehensive studies of cognitive development than reported here and also to start experimental programs in schools directed toward getting greater continuity in learning and instruction for more children, throughout all the school years, but particularly in grades 9-12. A large and continuing effort is needed if all children are to develop as well as they might. It is very doubtful that either the federal government or local school districts will take this kind of initiative, although both might support it financially. It is possible that task forces representing the various states might develop some guidelines and secure some external support in a manner similar to that done in a National Assessment of Educational Progress.

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Chapter III

INTERVENING IN LEARNING ENVIRONMENTS

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CONTEXT

The fundamental task of chief state school officers is to mobilize resources for the development and maintenance of effective learning environments. Although they have some opportunity to initiate their own programs, more frequently they are held accountable for the success of interventions enacted by legislators with which they do not necessarily agree—ventures which often are ill-fated from the outset. Fortunately, they are able to exercise some influence in preventing many unwise proposals from getting beyond debate.

But whether advising or initiating, they need and want prognoses regarding the potential impact of what is proposed. (Recently, a member of a state board of education confessed to me that he and his colleagues make decision after decision without reference to data pertaining to proposed policies.) Mounting any effort to effect change at the final point of intervention, the classroom level where it all has to come together, is an undertaking of great significance both logistically and morally. When we effect strategies designed to affect how others are to spend their valuable time and energy, we move into critical domains of what is morally right or wrong, good or bad.

My assignment is to provide an analysis designed to help you decide whether there are some practices worth promoting and some processes of improvment worth following. First, then, I shall talk about those manipulable variables thought to have an influence on learning such as teaching methods, class size, pupil grouping, instructional materials and the like. The literature is substantial and I shall draw from several excellent reviews now available. Subsequently, I turn to change strategies, a topic recently attracting considerable interest for which a body of literature is emerging. The conclusions and implications I draw, however, are the result of imposing my own perspective on the material.

Before proceeding with this analysis, let me say something about education intervention as a cultural imperative. The simpler and less changing the culture, the more likely that daily life in family and tribe will provide the needed knowledge, skills and attitudes. Nonetheless, it is the rare culture, indeed, that has not found it necessary or desirable to intervene through some deliberate teaching arrangement to assure learnings not always provided or reinforced naturally by the surrounding environment.

Accelerating change and cultural complexity increase the amount and kinds of learnings assigned to mechanisms of deliberate intervention. The United States of America provides a classic example. More than four hundred years ago, in our early colonies, it was deemed mecessary to provide schools to assure the skills of literacy needed to understand the principles of religion and the laws of the land—skills not necessarily learned in home and community. Rapid industrialization, urban and population growth, particularly during the past two hundred years, and growing identification with a world community in this century have vastly expanded our expectations for what is to be learned from educational intervention. Today, it is widely agreed that the goals to be sought through such intervention include the (1) fundamental literacy skills sought from the beginning, (2) preparation for a career and job satisfaction, (3) the intellectual skills necessary to independent judgment and continued learning, (4) an understanding of our traditions and values, (5) the ability to function adequately in a variety of social settings, (6) the ability to plan and organize for the realization of personal goals, (7) a broad array of knowledge and skills essential to performing constructively as a citizen, (8) self-understanding, (9) aesthetic perception and creativity, (10) emotional and physical well-being, and (11) moral and ethical character.

The list boggles the mind—especially the minds of administrators and teachers who have been expected to achieve all of them through the schools, not just for a few who are strongly reinforced by the home but for everyone. Perhaps it is this sheer load of expectations that has caused legislators to turn to first this and then that panacea; innovators to try single, presumably powerful interventions; and charlatans to get so much mileage out of elixirs and placebos. When problems are both urgent and complex and clearly have outstripped both funded knowledge and applicable past experience, humans too often turn to simple analyses, single solutions and rules and regulations, perhaps to restore some semblance of simplicity and order. Teacher education requirements and regulations constitute a glaring case in point.

Usually, as cultures become increasingly complex and allocate more and more to educational intervention, they also develop an accelerating array of agencies and institutions performing educational functions. With the advent of telegraph, newspapers spread the tapped-out messages to all those who could not receive and interpret them individually. Later, radio and television brought not only news directly into homes but also a host of messages deliberately designed to change both thought and personal behavior. We now live in a culture which only partly shapes and molds through its established traditions and tested beliefs, which is itself pushed this way and that by its own apparatus of intervention. In the face of what the television huckster is saying, with a million dollars worth of "proof" and visual credibility to back him up, grandma's wisdom is remotely eccentric and mother, clearly, is still in "the olden days" of the 1950's.

In an ironic way, our antiquated view of educational intervention only fortifies youths' perception of our inability to "get with it." While we continue to equate education with schooling, seeing television as only entertaining or supplementing, our children are being educated through a variety of agencies and institutions of which school is only one. Until we bring all of these and others with potential into perspective and deliberately shared responsibility, we will continue to view the schools with alarm, manipulate them to little avail and fall short of achieving the array of educational goals we have set for ourselves.

Just as we restrict the scope of educational intervention required in our kind of society by equating education with schooling, we futher restrict it by equating schooling with a teacher and a class of children. Consequently, we tend to assume that the provision of schools is adequate provision for education and that the provision of teachers assures adequate schooling. Not surprisingly, educational intervention stemming from such limited assumptions usually proves to be both inadequate and disappointing.

CLASSROOM INTERVENTIONS

Single Variables

When we speak of research not being useful or practical, we usually have in mind research into single variables close to the teacher such as a method of teaching reading. There have been many studies, large numbers of them focused on process variables such as pupil attentiveness rather than on products such as achievement. Of those in the latter category, more than half have failed to obtain a predicted relationship between an intervention and either pupil achievement or attitudes.[1] Averch *et al.* examined studies into the effects of differences in teachers, class size, instructional methods and the like, concluding that nothing consistently and unambiguously makes a difference in student outcomes.[2] From a review of research on 16 variables, Jamison *et al.* concluded that none consistently affects student performance.[3] They looked deeply into studies of student-to-teacher ratios, assuming this to be a particularly important variable because it is economically relevant and under a school system's control. They concluded that class size has little influence on student learning.[4]

And so it goes in review after review. Laboratory studies are a little more definitive, but examination usually reveals that several interacting variables, rather than just one, were manipulated. If there is anything that all of this should teach us it is that commitment to some single factor in something as complex as the promotion of learning is doomed. If any one significantly outweighed all others in regard to theoretical underpinnings and potential power, surely its benefits would be well known by now. No such candidate has appeared. Nonetheless, policy makers, researchers, and practitioners keep hoping and trying.

It is a grave mistake to conclude from such inquiry that nothing makes a difference. We know that teachers appearing to work with similar conditions create different classroom climates and, indeed, produce different results. Averaging data across schools and classrooms in large-scale evaluations such as the Coleman Report wipes out such differentials.[5] And yet, those experienced in compensatory instructional intervention conclude that for benefits to occur programs must be geared to very specific pupil characteristics and needs.[6] These, in turn, depend not on *a method* but, presumably, on a skilled teacher's sensitive orchestration of a host of variables operating virtually simultaneously.

Since dissection of what is important in classroom learning so often comes down to the teacher, it is to be expected that teaching is a much-researched variable. Too often, however, the topic has been approached as though some single, powerful factor such as the use of reward or praise explains all. Clearly, the promise lies in recognizing the complexity of teaching at the outset and then hypothesizing potentially powerful variables. Such an approach assumes that not one but each of ten or twenty factors makes some difference and that all of these together make or could make a significant difference. But now the problem appears overwhelming because the teacher, whose pedagogy is a composite of many elements, is but one of several possibly potent variables influencing classroom learning.

Multiple Variables

Ironically, bringing the analysis around to recognition of multiple rather than single variables carries with it the danger of recognizing almost everything, but nothing in particular, as important. Although, for example, interclass grouping on some criterion of homogeneity such as I.Q. or reading achievement appears not to warrant the effort, this does not rule out the instructional usefulness of certain kinds of grouping. The skilled teacher, with a heterogeneous class, groups for specific purposes and rearranges the curriculum, methods and materials in the light of purpose and group composition. Grouping in such instances is neither inconsequential nor the definitive factor.

The plethora of research into single phenomena leaves one with both a feeling of fragmentation and the conclusion that instruments are now available for further inquiry into a great many things. What is needed, at a minimum, is some ordering of the variables that have attracted the bulk of attention and conceptualization of a relatively small array likely to account for a good deal of the total impact in student learning. Beyond these, we need theories that will exclude as much irrelevancy as possible and pose hypotheses around which present and future cumulative research might be clustered. Such theories probably will arise out of the time-consuming, expensive process of observing what goes on in classrooms.

The clustering of studies employed by Dunkin and Biddle in their comprehensive review of the field is useful as a guide both to practice and to future inquiry.[7] Under the label "context variables," they include subject matter, nongrading and multigrading, computer-assisted instruction, experimental curricula, class size, physical properties of the classroom, equipment, and a host of pupil variables. They conclude that many of these affect teaching and classroom behavior in at least minor ways. Under "presage variables," they include all those factors of background, attitudes, expectations, years of experience, and the like pertaining to teachers that researchers have attempted to associate with teaching effectiveness. Their conclusion here is that the "track record" to date is not impressive.

They view theory and research in the realm of observable events in the classroom as having great potential and perform a valuable service in grouping the scores of variables studied into just a few categories. They include in the "trait model" such teacher behaviors as praise, criticism, questioning, lecturing, giving directions, postquestion structuring, and so forth. Although studies have connected some of these variables with product variables, Dunkin and Biddle are not optimistic about there being much power here. They see somewhat more potential in the "interaction model" which includes positive and negative reinforcement, appropriateness, redirection, episode length and the like, while recognizing that this category inadequately covers classroom events.

Research into teaching has been dominated by psychological approaches. But the "social systems" model depends as much on sociology as on psychology and parallels work in the field of leadership. It endeavors to encompass actions of both pupils and teachers and the climate attained and sustained. Particularly relevant is the research of Kounin, who has sought to examine the smoothness and momentum of classroom activities, the extent to which the teacher is on top of things and seeks to keep pupils involved, the teacher's ability to stimulate pupil enthusiasm, etc.[8] The social systems model, together with models having more to do with psychological considerations such as expressiveness and reinforcement and the kinds of context variables mentioned earlier, bring us close to an adequately comprehensive framework for classroom analysis and intervention.

TOWARD A MODEL OF CLASSROOM LEARNING

It becomes apparent from the foregoing that it is a long leap from research summarized in focused clusters to some kind of framework to guide research and practice, Categories presenty used overlap, there are too many concepts and variables, and studies vary widely in the level of specificity. What is needed is a conceptual model of major factors thought to affect school learning and how they interact. Such a model is certain to be an oversimplification but, nonetheless, an improvement in what is now so varied a terrain that one needs a high level of expertise to find a path through it.

Carroll's model meets the criteria of using a very small number of unifying concepts, conceptually independent of one another and referring to phenomena at the same level of discourse.[9] Not surprisingly, since Carroll is a psychologist, his model is more psychologically than, for example, sociologically based. Three of his five elements reside in the individual: *aptitude*, *ability* to understand instruction, and *perseverance*. But, interestingly, he treats these in a nontraditional way, phrasing them to suggest malleability rather than immutable givens. For example, he defines aptitude as the amount of time needed by individuals to learn the task under optimal conditions. This view is basic to the idea of children proceeding at their own pace and, for example, Bloom's approach to mastery learning.[10] Likewise, ability defined as ability to understand instruction suggests possibilities for classroom intervention. Mercer's pioneering work demonstrates the folly in labeling and giving up on seemingly retarded children who may have difficulty with one set of written or oral instructions for all but those who function at normal or gifted levels within a culturally appropriate normative framework.[11]

Two of Carroll's elements stem from conditions outside of the individual: *quality of instruction* and *opportunity*, the latter defined as time allowed for learning. The former is what so much of the research on teaching has encompassed. It is my own view that clustering the complex factors involved into a single component is too much of a simplification, even though any attempt at division probably would violate Carroll's criterion of conceptual independence. I shall suggest a separation later.

The model's emphasis on time, coming at it from two interfacing perspectives, is of particular interest, given the relatively low visibility of this factor in the research literature. Wiley and Harnischfeger regard this as a grave oversight and have both summarized and conducted research showing large variations in degree of exposure to schooling and large effects of exposure on achievement.[12] Carroll emphasizes, in discussing his model, the importance of time-on-task. Total time allocated to a given area of learning and time actually devoted by the student to that learning could be highly differentiating factors. And there is plenty of room for effective intervention. Conant's study suggests such dominance of arithmetic and language arts in the primary grades that only a few minutes a day are left for everything else.[13] And studies of classroom activity since Hughes' in 1959 lead one to conclude that involvement in learning tasks for about 30 percent of the school day is all one should anticipate for most classrooms.[14] My guess is that finding ways to increase students' on-task involvement in what is to be learned constitutes one of the most potentially productive classroom interventions.

Any discussion of the quality of learning is necessarily incomplete with the omission of subject matter. Although studies comparing alternative curricula reveal no general advantages of new or innovative curricula over traditional curricula, they do show that differences in test performance reflect differences in content inclusion and emphases in curricula.[15] In other words, students learn what they are taught. But they do not learn it equally well. How well is dependent on several major elements, such as those proposed by Carroll, and an array of small but compositely significant factors within each of these.

TOWARD A COMMITMENT REGARDING EDUCATIONAL INTERVENTION

Educational leaders must make commitments. They never would take action if their commitments and accompanying behavior necessarily awaited the availability of definitive evidence. Inevitably, their decisions go beyond the data but they should be guided by trends in the relevant evidence which, in turn, goes beyond the conventional wisdom. Research rarely gives pinpointed answers. Its practicality lies in raising the level of intelligence brought to bear on the decision-making process, in providing intellectual resources for educators, scholars and laypersons.[16]

The commitments of educational leaders stem from the values and beliefs they hold and from the responsibilities they must fulfill. One would hope that these would be tempered by appropriate, disciplined knowledge. With their ultimate goal being to promote quality learning environments, what commitments might they articulate and espouse in regard to intervention? I can answer this question only for myself, since the question is irrevocably tied up with personal values.

First, it is necessary to get beyond and to resist all intrusions of the idea that some single panacea, if not already available, lies just ahead and, with massive infusion of time, money and energy will solve all educational problems. Second, it is necessary to be committed to and fight vigorously for the position that, as a people, we have made a commitment to a range of educational goals approximating the eleven I cited earlier. Each is strongly supported by some significant element of our diverse population. The current cry of "back to the basics" is but one of several recurring themes in the turbulent history of American education. There are others deserving our attention—perhaps even more at times like this when goals long fought for are thoughtlessly endangered. Third, the position that early phases of life are merely instrumental to later ones is morally shabby. We must be committed to rich, satisfying educational experiences for each child now, not simply more efficient preparation for what is to come next. Fourth, so-called accountability programs based on improving student performance on specific objectives are premature. Without a scientific base on which teachers can depend, simply holding teachers accountable for improving pupil scores is untenable. It will be decades, if ever, before such programs are anything more than a substitution of form for substance, and a virtually futile expenditure of time and money.[17]

These are just a sample of the values or predispositions I would impose on the process of making commitments pertaining to the improvement of learning. What commitments would I now be willing to make in regard to substantive interventions? I find it necessary to enlarge the Carroll model, at the risk of violating his criteria of economy, simplicity, and discreteness or independence. I come up with a list of nine which, in turn, cluster loosely into four broad categories: subject matter and classroom organizational context; aptitude, ability and perseverance (as Carroll defines them); pedagogy and expressiveness; opportunity for learning and self-instructional educational media.

By *subject matter*, I mean the several domains of human knowledge and experience and the conventional, usually printed, media for their teaching. All domains implied by our socio-political goals must be included. Inclusion of the arts in our formal statements of intent means that the arts must appear in the operational curricla as a commitment and not a sometime-frill. This is a face validity criterion that does not require research justification.

By *organizational context*, I mean vertical and horizontal structure of the classroom, students-to-teacher ratio, and student mix. Teachers seeking to individualize and personalize instruction require the vertical flexibility of multigrading and nongrading. They must not be or feel obliged to confine their programs to artificial, arbitrary grade levels. They need a heterogeneous mix of students because students slow in some things learn from those who are gifted without retarding the latter. And they need a varied mix to assure the interclass, interracial, interethnic kinds of associations mandated by our rich and diverse society. They need manageable-size groups so that they can keep on top of things, have the energy and drive required to be "with it," to care for each student's learning. The "comfort level" expressed by teachers is about 25. But there can be many variations in group size, especially when teachers team teach and, as is rarely the case, wisely employ alternative media. To repeat, the basic class should be heterogeneous, specific grouping arrangements serving to facilitate cognitive, social and affective outcomes as well as a wide array of learnings not usually measured by standardized tests.[18]

There is little need to say more about Carroll's elements of *aptitude, ability* and *perseverence*. These appear to have a certain centrality as well as to be amenable to intervention. Teachers can learn to diagnose individual learning rates, vary instructional procedures and provide the change of pace and stimulus seemingly required to keep students involved. Of the three elements, that of perseverence has most defied diagnosis and prescription. Fundamental research is needed.

I have divided Carroll's instructional category into two: *pedagogy* and *expressiveness*. The first of these I view as technical. We can and should train teachers to define objectives, be alert to what is going on in the classroom, cue the children whose attention is beginning to wander, reinforce desired responses, actively engage children in dialogue, and so on—behaviors which have some positive relationship to learning. But these skills are quite different from genuine, expressive responsiveness to and trust in children. Teachers do not need to ooze love for children; such may not even be desirable. But it is clear that biting sarcasm and criticism turn off students in the classroom.[19] Beyond these limits to acceptable teacher behavior, there probably is a wide range of positive expressiveness conveying support and encouragement which is positively related to student learning.

The element, *opportunity for learning*, as defined by Carroll, would appear to be of great significance, not so much from specific research into this topic but on the basis of general empirical knowledge regarding individual differences. Most classrooms are geared to common periods of time for all, sometimes with some special provision for the two or three most gifted and the several slowest. Some children never complete an assignment. The cumulative effect is devastating, sorely diminishing motivation and potential attainment for vast numbers of children long before they complete the elementary school grades.

I include *media* simply because classroom intervention need not be confined to what merely extends or enriches the teacher as medium of instruction. Radio, television, and programmed instruction, without direct teacher supervision, are as effective for some things as is conventional teaching.[20] These alternative media are neglected in the classroom—even though radio and television have proved themselves elsewhere—as we continue to pursue our myopic habit of equating schooling with human teachers. A classroom student-to-teacher ratio of 25 need not exclude the possibility of additional numbers of students being accommodated simultaneously elsewhere by electronic teachers sharing the instructional burden.

In fact, it is long past time for us to conceptualize a model of education that transcends school and classroom, bringing into operational juxtaposition all of our resources for learning in a total ecology of education.[21] If there is any lesson our educational leaders should be learning it is that the challenge of creating effective schools is all tied up with the larger challenge of securing educational commitment and involvement from the home and immediate community, public service institutions, the communications enterprise, recreational and other nonformal agencies and business and industry. We can and must create effective schools but schools, however good, always will fall far short of providing for the full range of learning needs in our kind of society.

STRATEGIES FOR IMPROVEMENT

The task of the chief state school officer is to articulate directions for educational improvement and to help create mechanisms and infrastructures by means of which they can be achieved. What procedures should he or she follow?

The traditional approaches have been through statewide commissions and task forces, teacher education, and a variety of strategies not quite accurately labeled the linear model of research, development, diffusion, and evaluation. Each has its assets and liabilities, strengths and weaknesses.

Statewide Commissions and Task Forces

The appointment of commissions and panels, usually made up of scholars, practitioners and community leaders, has the advantage of drawing to the public attention some problem or need and alerting subpublics likely to have responsibility for implementing recommendations. In effect, this top level executive action identifies a problem, signals that it is to get attention,and sets in motion processes which are intended to trigger actions and reactions for a long time after the final report is in and dissected by the press.

Unless recommendations are followed by legislative action—and frequently even when such occurs—the impact tends to be diffuse rather than specific. Frequently, the effect is to mobilize energy around a need which previously had little visibility. Although supporting evidence for proposals may not be forthcoming or provided, in many instances the total impact is greater than through sharply pinpointed research and development efforts.

But the positive features are virtually mirror images of the accompanying weaknesses. The technique is essentially hortatory; groups are influenced by persuasion. For various reasons, however, the specifics of what they are being persuaded to rarely are enunciated. The very diversity of commission membership makes agreement difficult on anything other than generalities. Bringing these generalities to a level of specificity would thwart the near-consensus usually required.

Rarely do such commissions have a sufficiently long life span or adequate staff work. Consequently, recommendations depend more heavily on the views of powerful committee members than on data. Often, these represent relatively enlightened conventional wisdom; but the blending of this wisdom and thorough review of funded knowledge tends to be the exception rather than the rule. Sometimes, political leadership already has changed hands by the time a final report is written. A short half-life for the recommendations too often is a generous prediction.

Fortunately, there are notable exceptions. A model for this approach can be derived from the British experience with White Papers, Royal Commissions and the like. The Plowden Report on primary schooling achieved visibility from Lady Plowden's stature and considerable respectability from the intensive period of reviewing research, visiting other countries, consulting authorities and the like. Unless we are prepared to conduct commission inquiries at such a level of depth and intensity and tie recommendations to implementation strategies, we probably should cease and desist.

Teacher Education

Our proclivity for equating schooling and teaching makes the education of teachers an obvious, popular approach to effecting change. Outwardly, at least, it appears simple and straightforward. One arranges for those who know to teach those who don't. Direct costs are minimal, since responsibility for securing what is thought to be required is placed on the individual teacher. Schooling is the largest enterprise not providing opportunities for inservice education and professional improvement at the time and cost of the industry. And this is one of the major reasons why professional development programs are so ill-focused and ineffective.

Although teacher education has face validity as an improvement strategy, it is plagued by a myriad of deficiencies. It almost invariably proceeds from a base of no data regarding what specific teachers need or know. Inservice, professional development is so interwoven with salary schedules and salary schedules with degrees and credit points that a locally based program sharply focused on making teachers more competent immediately finds itself in competition with what already is required. Thus, a teacher enrolls in a degree-oriented curriculum for administrators when what he or she needs is to learn to do present work better. Since teachers are paying for it out of their own pockets anyway, they can hardly be required to spend their time and money otherwise. Usually, too, teachers leave their immediate problems and schools to learn what may not be viewed as valuable or is not reinforced by the social system of the school within which they carry on daily work.

The education and re-education of teachers has such obvious significance that it always ranks high in the official rhetoric of school and educational improvement. But the present lack of—and, indeed, general disinterest in—a science of education contributes to setting rules and regulations which, in general, inhibit the exercise of badly needed creativity and experimentation in the field. After years of observing and studying the problems, I am now prepared to conclude that there is an inverse correlation between the extent of licensing and accrediting activity emanating from state governance and the quality of teacher education programs.

Input-Output Models

A recently popular model of planned educational change is the input, environmental response, output model which assumes that activity follows and is evaluated in accordance with purpose. It has been brought to a high level of assumed rationality and visibility through state and federal efforts of research, development, dissemination and evaluation. Usually, there is some research into need before there begins the process of developing new curricular materials, instructional techniques or alternative organizational forms. Usually, too, the process of development is accompanied by testing, feedback and retesting to assure quality. The process is both rational and focused. It is as likely to seek reform as it is to seek improvement. It has attracted good minds and substantial sums of money. The linear R D D and E model has extraordinary appeal because it is so much a part of the western rational model of the world which has played a significant role in bringing us to where we are as a nation. For many it is God, and the computer is the ultimate expression of that in which we have faith.

Giant-sized attributes sometimes are accompanied by large-scale shortcomings. The major weakness of this model, especially as used in comlex human enterprises such as education, which lacks a precise set of priorities, a highly developed science and technology, and a clear image of intended products, is a considerable underestimation of the complexity of the so-called target. Teachers are viewed as relatively passive, only mildly resistant and, in general, waiting for better ideas and ways from others.[22] Sarason has pointed out that if there is any one thing that effectively blunts and negates externally initiated reform efforts, it is the culture of the school and all the roles, activities and reward systems that go into maintaining that culture.[23] Failure to understand this has foreordained to failure millions of dollars worth of highly rational school improvement efforts.

Because of both their necessarily focused conceptual character and the high costs involved, reform efforts following this model address themselves to only one intervention or a small cluster of variables. Our previous analysis of research reveals that no single variable consistently produces significant improvements in student achievement.[24] State and federal elected officials take a dim view of high expenditures and insignificant gains on standardized test scores. They tend to overreact to the Coleman[25] and Jencks[26] studies, shifting generally from inflated expectations for schools to the erroneous conclusion that schools, not just ill-conceived, inadequately comprehensive projects, make little or no difference in the lives of students.

The Responsive Model

There remains a model that probably is too homespun in its assumptions, too demanding in its operation and too lacking in its glamor to attract the collaborative support it requires. Nonetheless, I am convinced that some reasonable approximation of it is absolutely necessary if we are to have the kind of school vigor and rejuvenation we so sorely need. Unfortunately, it is not the stuff instant recognition of charismatic leaders is made of; it calls for the long haul of commitment, dedication and hard work.

You and I know that there are literally thousands of teachers who want satisfying work and who entered teaching because they thought they would find it there. It is clusters of such teachers and dedicated principals who together produce the good schools which flourish for brief periods of time and which are used again and again by each of us to illustrate that schools can be exciting places. We conclude that they depend on unique and fortuitous circumstances that probably cannot be replicated without going on to consider what is involved and how the core of professional commitment in thousands of schools might be mobilized. To find out what goes on when staffs try to improve their schools and how to bring about and maintain good learning environments constituted the focus of a project conducted by a group of us over a six-year period in the League of Cooperating Schools.

There is no time for details.[27] We began with the assumption that the single school with its principal, teachers, students, and parents is the organic unit for educational improvement. This is the place where the efforts of all of us ultimately must find a home, whether these be through teacher education, research, curriculum development, or supervision. In the final analysis, those who comprise this organic social system must sense an important problem or need, come to grips with it, take action, and change personal behaviors or the most highly touted reforms simply will not find their way into the schoolhouse. This is the culture we must try to understand, support, and help become healthy or our entire system of schooling will be ill-nourished and malfunctioning, no matter what intended improvements we pump into it.

We assumed, also, that change is lonely, difficult, even dangerous, and demands of those who participate in it the discipline of delayed gratification. The need for company and peer group reinforcement are powerful forces both for keeping things as they are and for moving out into the new and unexplored. We decided at the outset to try to enlist these forces in the cause of deliberate efforts to improve. We reasoned that norms pertaining to inquiry, discussion, group decision-making, and the like might be substituted for the norms of isolation, nonsharing and so on which serve to inhibit teachers from using anything that smacks of innovation or creative individuality. A consortium of 18 schools joined together in self-improvement promised peer association, sharing and support going beyond that available in just one school.

Next, we assumed that external support in the form of encouragement, legitimization of ideas, materials, etc., was essential, at least initially. And so we created a hub or center from which such support would flow. Erroneously, we believed that the need for it would diminish and, ultimately, disappear. What we learned was that the need remained; the nature of the desired support changed. Attempting to improve oneself or one's school is lonely. The knowledge that someone knows what you are doing, that you are trying, that you make a difference and that this someone cares and trusts, even when you fail, is extraordinarily important and deplorably absent from the schooling scene. Freud called it "love."

But, of course, love is not enough. Personal skills and abilities have to be developed. And so there were monthly meetings of principals, designed largely by them, to learn the leadership techniques they found themselves needing. Teachers visited teachers in other League schools to get ideas at the practical level, came back to their own schools to talk about them and then frequently modified what they had been doing before. Mini-workshops emerged, taught by teachers perceived as having something to offer and attended by teachers who wanted what was offered. No fees were paid, no credits were earned. Humans are the funniest animals; they like to learn, especially when there is a considerable element of choice.

For reasons which largely perplex me, many educators not involved in or with schools simply don't understand what I have been talking about. By and large, teachers and parents don't have much difficulty. Researchers, consultants and self-styled agents frequently simply push it all aside. Although I don't have hard data for this conclusion, my impression to date is that the more distant from schools and classrooms, the greater difficulty one experiences with what I now refer to as the responsive model of educational change.[28]

I do not take these difficulties lightly. No doubt, they stem in large part from the fact that the strategy runs so counter to the standard, linear model through which one defines and refines objectives and then selects specific methods to be injected into the system. Visitors invariably asked us what innovations we were promoting and went away puzzled when we told them that the League was the innovation; that we had created a new social system out of existing parts; and that the educators involved decided what ideas and resources made sense in the light of process criteria they developed. Sometimes, school personnel were attracted to well-known innovations, sometimes not.

Visitors asked how much achievement scores had improved (even when the project had hardly begun) and were astounded when we said, again, that the schools selected what to improve and this did not necessarily mean reading or mathematics. We also said that we were preparing to help teachers measure such things and that we were gathering overall data on children's attendance at and liking for school.

Our work made no big splash—no headlines in *Time, Newsweek* or the *New York Times*. How do eager reporters get a newsworthy story out of everyday folks trying to do their job better and "experts" who don't claim to have simple answers to the most complex problems? But our responsive approach is catching on.[29] IDEA is utilizing some of it in networks involving more than 1400 schools. The JDR 3RD Fund finds compatibility between their ideas for improving the arts in general and our approaches to change. Increasingly, we are receiving requests from intermediate educational agencies and districts, in particular, to assist in setting up leagues of schools.

In summary, the minimum essentials of the responsive model of school improvement are the following:

1. A process of dialogue, decision making, action and evaluation in each school involving at least a core of teachers and the principal at the outset and, soon, most of the teachers together with student and parent representatives. This DDAE process must be guided rigorously by a set of criteria pertaining to the kinds of

procedures to be used and resources to be consulted.[30]

2. A network of peer schools (from 12 to 20 constitute a manageable number), committed to working together and sharing ideas, methods and materials over a period of several years.

3. A resource center possessing no punitive authority, existing solely to provide support and staffed by persons whose rewards come not from giving "expert" consultation but from assisting others to help themselves. Such a center should not be reluctant to propose and analyze ideas, provide guides to resource materials, and secure special kinds of assistance on request. And it should play a major role as a switching station for bringing together principals and teachers wishing to give or receive help.

4. An ongoing structure by means of which principals continuously explore their mutual problems and develop together the needed, changing leadership skills.

5. Temporary "pedagogical service stations" through which teachers with a track record in improved practices teach those who want help in specific aspects of any major element thought to have bearing on improved intervention in classroom learning.

Clearly, infrastructures of this kind function most effectively when the central administration of school districts decentralizes considerable authority as well as responsibility to local schools. They call for new approaches to supervision, resource allocation and teacher education.[31] They would benefit immensely, too, from regional educational service centers with curriculum development capability and an array of specialized services available on request. The goal always is to increase local school capacity for problem solving, a goal now being taken seriously by such agencies as the National Institute of Education.[32]

Toward Knowledge-Based Educational Agendas

One problem shared by all approaches to school improvement is that of developing careful agendas. Sometimes, these emerge from serious preparation for the visits of review teams from regional accrediting agencies. But even these relatively comprehensive proceedings depend heavily on impressions and a paucity of hard data on provision for educational goals, use of school time, topics actually taught through the grades and so on.

It was our conclusion, after working closely with the 18 schools in the League over a period of six years that almost all schools threshed about for unduly long periods of time in trying to agree on agendas through a process heavily dependent on opinions and minimally drawing on hard data. And, once into a problem, priorities often were little or no more clear than before. It appeared to us, also, that the schools might benefit from some awareness of any common weaknesses or inadequacies of schools begging for attention.

And so we launched "A Study of Schooling in the United States." This ambitious project is designed to gather data on what goes on in school triples—elementary and junior high schools feeding into secondary schools—in a number of states; to review research and ongoing practices with a view to developing arrays of defensible alternatives; to pose recommendations and strategies for improving schools generally; and to provide a methodology and accompanying instruments by means of which local schools, with the assistance of various intermediate agencies, might develop agendas for their own improvement.

It is my conclusion that self-improvement plans of local school initiative, conducted within supportive infrastructures of the kind described here, constitute our present best bet for increasing the dynamic character and effectiveness of schools. To assure that the problems addressed will not be trivial and will include reform in as well as improvement upon existing practices, there needs to be a much more rigorous process than now exists for appraising the nature and conduct of present programs. For attainment of a truly comprehensive educational system including more than effective schools, such appraisal should take stock of the present effectiveness of all existing educational agencies and provide an inventory of potentially educative institutions. In this and other ways, we will advance steadily toward the realization of an educative society.

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Chapter IV

LEARNING: A REPORT FROM NIE

Harold Hodgkinson
Director, National Institute of Education

Editorial Note: Dr. Hodgkinson's presentation was in the form of a narration and explanation of a number of visual displays, rather than a formal address. A few of these displays are reproduced in the following pages as an illustrative summary of the major themes of his presentation.

BEFORE WE GET THEM IN SCHOOL:

1. In last 4 years, 50% of U.S. households moved.

2. Infant mortality—U.S. now down to 14th. Declining in maternal and child health and day care. In New York, 13 deaths per 1,000; in Forest Hills, 41.5 deaths per 1,000; in Harlem, in recent years, mortality gap has widened.

3. Infant deaths related to low birth weight, which is related to lack of pre-natal care. (Well over 70% of infant deaths could be averted by simple pre-natal care.)

4. Poor nutrition *in utero* gives a 1 in 4 chance of producing a child whose brain weight at age 4 is 125 grams below the norm of 1,250 grams.

5. In 1974, one of every six children in the U.S. was living with a single parent. Increase rate is same for white and black.

6. Striking decline in amount of time parents spend in activities with their children.

7. Marked increase in adolescent suicides.

8. New diseases—anorexis, dyslexia, hyperkinesis.

9. "Latch-key"children and marked increase in divorces in which neither parent wants custody of the children.

GRADES AND TESTS:

1. The *first* grades children receive in school have a pervasive impact on later performance.
2. Therefore, grades predict more grades rather well.
3. Grades in school and college are *very* poor predictors of vocational and personal success. (*Level* of education achieved does predict, but not grades at a given level.)
4. Grades leave out many important kinds of learning.
5. Even with (some) test scores declining, grades are up. (Average college grade is now a B.)
6. Half of tme states are now introducing minimal competency standards for the high school diploma. Some have done the same for colleges.

COURSES AND GRADES:

1. During the decade, high schools increased their course offerings from 1,000 to 2,000 courses. The new courses (psychology, philosophy) look like what the first two years of college used to be.
2. Courses showing increases—consumer education, conservation and environment, earth-space science, speech, drama, writing, biology, foreign languages (Spanish), sociology, art, industrial arts, TV-radio-film, psychology, short story, myth and legend.
3. There are currently over 500,000 curriculum products commercially made.
4. Teachers spend 95% of their classroom time working with these materials—locally developed materials were used fewer than five days per school year.
5. There is no "consumer reports" service to provide reliable information on these half million products, e.g., 19,000 texts now on market for K-12.

OTHER KINDS OF LEARNING— DISSEMINATION—

1. Best form of information transfer: First-hand observation (visits).

2. People-to-people interaction vital.

3. Methods of seeking and using information vary widely (do you prefer print or phone?)

4. Not *adoption* but *adaptation* (both the innovation and local scene change. New technique must be modifiable by 20% for ownership—"Hamburger Helper").

5. People change when it is in their self-interest to do so. (Lowering the *threat* level may be more useful than increasing the reward level.)

6. Redundance is good for a change. The first contact is seldom enough.

7. Most projects do not plan to increase autonomy as external support is withdrawn.

Chapter V

GETTING EDUCATIONAL SPECIALISTS THINKING AND ACTING ON LEARNING THEORIES

Michigan Department of Education Team:
John W. Porter, Superintendent of Public Instruction
Carol Lewis, Michigan Department of Education
Muriel Van Patten, Michigan Department of Education
Ray Pruet, Detroit Public Schools
Gladys Robinson, Detroit Public Schools
Fred Thorin, Bloomfield Hills School District

Editorial note: The Michigan Department of Education team, which included both department staff members and practitioners from cooperating school districts, made extensive use of visual displays to illustrate the narrative presentation. The following chapter is a composite summary of the remarks and the content of the visual presentation.

Introduction by Dr. Porter:

I would like to begin by relating this presentation to those on Friday. Tyler gave us the theories and definition. Klausmeier shared with us a method and delivery system.

What we hope to do this morning is to show you how we have gone about implementing the theories and various methods statewide.

I'm more excited now about student learning and public education than I was eight years ago. I've changed roles. I perceive my job differently and I suspect the educators in Michigan perceive me differently, because we intend to become the "Mayo Clinic" of public education. I'm excited because we've defined the new role of the state department in student learning and redefined the concept of local control. The importance of this statement is the reduction of antagonism and threat from the State Department of Education.

The problem, my colleagues, is that we have not agreed upon *minimum quality indicators*. We have allowed—at the local level and in our departments—projects, programs and activities to be funded and operated based upon their own self-fulfilling goals and objectives. And we've done this in the name of equal educational opportunity! We are changing that!

It's only been since 1965 that state departments of education have been recognized as a significant part of the educational scene. Prior to 1965, departments of education were to be seen but not heard. If one were to look at the facts, this is readily explainable. Up until about 1965, the colleges of education determined certification, local school boards determined who would be hired and who would be fired, and teachers determined which students would pass or fail by their own standards. A long time colleague of mine, Ferris Crawford, labeled this the period of the great cooperative collusion.

In 1965 this all began to change and, fortunately or unfortunately, three events took place in that year which set the stage for the new design in our state:

—First, we got an act, a state act, that allowed teachers to negotiate for their salaries, which no longer would permit school districts to arbitrarily determine who would teach and who would not teach.

—Second, we got a new constitution, which established a state board of education which would determine the certification of teachers in a more policy-like way.

—Third, we became the recipients of federal aid through the elementary and secondary education act of 1965, which would enable state departments of education to hire the kinds of staff that would be needed to provide the kind of leadership that the country was seeking as a result of *Brown vs. Board of Education* and many other historic events of the previous 190 years.

Five years ago in 1971 in this same city I unveiled to the chief state school officers our state accountability model, a model which has over the past five years proven to have been extremely successful within our state and indeed in a number of other states. A recent survey indicates that a number of states have adopted the principles of the Michigan Accountability Model, which at the time was extremely controversial but which today is not. However, there were some factors which we had not realized would emerge as a result of the accountability model. The purpose of the presentation today is to provide you with what we believe are the vexing needs that are desirable in order to truly bring about quality education in all of our schools.

We believe we have successfully brought closure to the role and function of basic education in Michigan. For the past seven years we have been aggressively establishing new responsive programs and painstakingly evaluating their impact and effectiveness.

We believe we have now identified the major *void* in public education, and we are confident we've designed a cost-effective solution at least at the elementary school level.

In essence, we've discovered that projects, activities, and curriculum programs instituted at the local level tend to, by natural choice, generate their own self-fulfilling goals and objectives. This educational phenomenon seems also to be true in state departments of education. It's even true of Michigan's four most innovative programs:

—The *successful* performance-based compensatory education program,

—The *highly touted* state assessment program,

—The nationally recognized accountability model,and

—The newly established professional development program.

The fact is these programs should not be considered successful in and of themselves. We are now convinced that what's been the missing link is that common thread which would enable the educational practitioner to carry out programs, projects, and activities in such a way that they would add to the knowledge base of that new common thread.

We did not, however, arrive at this point in time overnight. It has been a slow, arduous process of piecing together various aspects of what might be labeled a jigsaw puzzle.

1. We began our assault on bringing about a match between school practices, equality and learning theory in 1969 with the establishment of the *state assessment program*.
2. In 1970 we established the *performance-based compensatory education program*.
3. In 1971 we adopted the *Michigan Accountability Model*.
4. In 1972 we promulgated the *State expected minimum performance objectives*.
5. In 1973 we shifted form norm-referenced to *criterion-referenced state testing*.
6. In 1974 we adopted an *equalization formula* for financing.
7. In 1975 we established the statewide *professional development center*.
8. In 1976 we instituted the quality control determination for the individual student's *educational health check*.

These eight shifts in public policy are now all being interrelated, because we've learned something at each step along the way.

1. For example, the first thing we learned was that most state departments of education did not have a definite role to play in the learning process.
2. From the assessment program, we were able to pinpoint the general confusion which exists in teaching reading.
3. With the compensatory education program, we were able to isolate out what works and doesn't work, and we found that untrained teacher aides don't work.
4. From the accountability model, we discovered that organization and management are lacking in many schools.
5. With the state performance objectives, we learned that very little, if any, relationship exists between (1) what is expected, (2) what is taught, (3) what is tested, and (4) what is sent home as a report card.
6. From the shift to criterion testing, we were able to identify where performance varied on a standardized scale as a baseline, building by building.
7. With the power equalization formula, we were able to separate out negotiations from the teacher-learner process.
8. As a result of the professional development model, we found that colleges of education are of little help in teaching teachers to better teach.
9. With the educational health check report, we've established a *quality control equation* which is a major breakthrough in interrelating projects, programs and activities.

In essence, as I said, we've defined the *state's new role in public education* and, by doing so, we have redefined the *concept of local control*.

These steps, however, lead us into a very difficult dilemma. That dilemma, briefly, is what actions should the state take when it has the data which distinguishes among schools. The importance of this statement isn't so much that it's difficult to distinguish among successful and unsuccessful schools, but the real issue is whether any state has the strategies, techniques and leadership to bring about success in buildings that have previously been judged as unsuccessful.

We believe we now have the strategies, techniques and mechanisms to bring about such success in all schools. However, before focusing in on that issue, I want to very briefly set the stage for the *introduction of our proposed 1977 plan*. I want to conclude this first portion of our program with a slide presentation on the data now available in terms of *establishing the basic skills educational health check* which is our 1976 breakthrough!

The data which follows in the charts, which is the same as on the slides, provides us with the student, building and district *educational health check*. From this kind of information we have now translated this statewide data into a basic skills success formula which is $S \frac{O \times P}{Q}$. A successful school (S) is one in which more than three-fourths of the pupils (P) have mastered 75% of the objectives (O), with Q as the quality measure of 100% mastery. With the determination of this formula, and with the development by the Michigan Association of Elementary School Principals of a paper detailing the components they believe must be present in an exemplary school, we now face the issue of how to work with those schools which need to become more successful in the basic skills of reading and math.

We know and you know that there is more to an elementary school than the teaching of reading and math. So I am pleased to report to you that we now know what elementary school principals believe is a successful elementary school and we are about the business, in cooperation with them, of identifying such schools in the future. Their report is in a packet you will receive at the close of this session.

However, the acquiring of reading and math skills is essential. I wish, therefore, to make two points:

1. We now know because of MAESP which elementary schools are doing a successful job in teaching the basic skills and which are not! This has been validated by a study by Brookover, which is also in your packet.
2. We know this with a tremendous degree of accuracy without having to leave our department offices because of the data available.

You ask—with that kind of data, why don't the districts do something? There are at least three reasons:

Lack of a plan
Negotiations
Lack of an incentive

The big issue before us in Michigan today is how to help the elementary schools that are not too successful in the basic skills become more successful. What deluded us for the past seven years was the notion that most elementary schools could change significantly on their own initiative.

We've now concluded—and it has been verified by the educator organizations of our state—that major improvements probably will not come about without some type of external motivation and stimulation, including a strong retraining and upgrading component.

We are therefore proposing the *Gestalt*—a unique plan which:

1. Focuses on the learner
2. Interrelates major program components
3. Acknowledges that individual school buildings are different
4. Establishes a common denominator of success
5. Eliminates time as a controlling factor
6. Reduces teacher-principal threat
7. Provides incentives and is
8. Cost effective

I would like for Mrs. Carol Lewis to give you a brief overview of the booklet and film strip specially prepared for this meeting which explains the *Gestalt*.

For those unable to see the slide presentation, the Gestalt is a concept promoted by the Michigan Department of Education which interconnects a number of specific school practices with related educational learning theories to bring about improved student learning and performance. It is a unique approach designed to "get educational specialists thinking and acting on learning theory." The Gestalt is focused upon the elementary school building, and upon the building principal, in particular, as the instructional team leader. It works to bring together, in one systematic and complete package, educational practices which have previously existed in isolation from one another. It is primarily for those schools that have tried to bring about successful performance of most students in the basic skills, but, for various reasons, have not been successful.

Although no single variable can be utilized as a panacea for remedying educational deficiencies, the Gestalt provides a total approach to improved teaching/learning activities which has not been possible in the past. Unfortunately, both at the local level and in state agency special projects, program and activities have been funded and operated based upon their own self-fulfilling goals and objectives. With the state assessment data, we now have agreed upon minimum quality indicators which can be applied across the state to analyze the degree of success of all students. True equality of educational opportunity requires that we shift our thinking to an approach which permits the setting of such standards, such quality measures.

In Michigan, we believe we know what makes for a successful school. We know that school climate, not socioeconomic status or racial makeup, can make the difference. We know that we have programs and practices that are working. We can now assemble these practices into a comprehensive plan for change, cement them with staff commitment, and in this mix produce the direction, the opportunity, the resources that will result in quality education for every student.

The Gestalt is based upon three significant approaches to provide the help a building staff is seeking: (1) it institutes an instructional management system for the school; (2) it puts challenge and motivation ahead of threat; and (3) it relates good schooling practices to sound learning theory. The result is improved student skills achievement, regardless of the socioeconomic setting of the school, the racial minority makeup of the school population, or the geographic location of the buildings.

The Gestalt cannot be instituted simply by the awarding of funds. It must grow from an agreement—a social contract—between the state educational agency and an individual building staff, with local school board approval. A three-year contract is suggested, based upon the reassessment of needs, the redirection of energies, professional development of school staff, and the leadership of the building principal. A minimal grant will support the continuation, and/or implementation, of eight essential components:

1. Each building must establish a community citizen's council which will become actively involved in the setting of educational goals.
2. The school principal will assume responsibility for controlling the building budget in order to permit meaningful decision-making regarding staffing patterns, materials and inservice training.
3. Each building staff member wil identify, prior to the opening of school, the basic student expectations for each class or subject to be taught.
4. Each student will be administered a basic needs assessment for all areas of identified expectation before instruction begins.
5. The principal and teachers, working together, will identify staff needs in the area of professional development; the principal will coordinate appropriate inservice training.
6. The building staff will utilize delivery system analysis for identifying students falling behind expectations and will review with parents, prior to report card issuance, any such problem areas.
7. All reports and evaluations to parents will be designed to relate to identified student expectations.
8. Schools will have a means for documenting each student's achievements at the end of the school year. Those students who have not yet mastered basic achievements will have an opportunity for additional learning experiences through the provisions of a number of alternative programs.

The most critical component for Gestalt is the building level commitment of staff to the concept of better education for all students. That commitment is essential to success, because it is the climate, the related perceptions of student, teachers, and community surrounding a school, which is the most decisive factor in providing quality education.

The role of the state agency in implementing the Gestalt is one of support, not direction. It is to serve as stimulator, contributing the necessary financial and human resources to support the program. A team of specialists will assist school staffs in analyzing problems, developing and refining an individualized program which is based on validated programs and processes.

The Gestalt is responsive to what school districts want; in the process of that response it redefines both local control and the role of the state educational agency.

It clarifies that it is the responsibility of that state agency to ensure that there are no unsuccessful schools. The fulfillment of that responsibility mandates that the agency become responsive to identified needs, rather than focusing upon regulatory concerns alone. It then becomes the responsibility of the local educational agency to carry school success beyond minimal achievement in the basic skills and toward the development of competencies for life roles.

The success of the Gestalt is based upon its measured impact on students. At the end of a three-year period, utilization of the Gestalt should bring about improved student achievement in the basic skills for a growing number of students. In addition, the Gestalt will contribute to these effects:

1. Parents will be increasingly knowledgeable and supportive of the schooling process.
2. The school program will become one designed to meet the eductional needs of the students.
3. Teachers will express growing support for the school program.
4. Building principals will have better control of instructional process decisions for their schools.
5. Both local boards of education and legislators will be able to better identify educational needs and measure educational results.

The Gestalt is a new way to accomplish an old goal: the achievement of quality education for all students.

We believe this approach will make a measurable difference in our school buildings. We have seen it happen in a number of different kinds of buildings over the past seven years, and we have some people here this morning from three different school districts who have translated the rhetoric into actual practice.

I am sure you have many questions to ask them at this time. Again, we were pleased to have been asked to share with you what we're trying to accomplish in the name of equality of educational opportunity.

Chapter VI

WORK EXPERIENCE AND LEARNING

Grant Venn
Callaway Profesor of Education
Georgia State University

Our young must be prepared for adulthood—this is the purpose of the school today and was the purpose of the school yesterday.

What will the adult world be like? What knowledge, skills, understanding, and experience will be needed in the future? What should the schools teach? What should the home and community teach? Can a school system designed 100 years ago educate today's youth? How do youth learn values, responsibility, wisdom, independence and self-confidence? Is knowledge adequate preparation? What necessary learning took place in the home, in the community, in the work force and by experience that cannot be learned the same way today? What is the role of the school today? How do we give our youth a chance to "try out"what they learn in school, to test what they believe and to understand reality through experience? How can our young use learning in creative ways without fatal consequences? How do we relate learning in school to reality, the future and the individual?

All of these questions are being raised by the young and their parents, as well as by perceptive educators. The growth of our technical society has changed the role of home and society to the point that many young do not see or understand a major adult role which is "work." Few can adequately tie the learning in school to the reality of work in a technological society.

We come to the point that we know the schools cannot do the job of teaching our young—alone, and much of what they need to learn is not available through the traditional "pick up methods" of the past. The question then is how do we provide the experiences necessary so learning may be more than just formal education and knowledge confined to institutional settings?

Many people have been stating the dilemma in different ways.

Conclusions of Study Groups and Experts

As the labor of children has become unnecessary to society, school has been extended for them. With every decade, the length of schooling has increased, until a thoughtful person must ask whether society can conceive of no other way for youth to come into adulthood. If schooling were a complete environment, the answer would be that no amount of school is too much, and increased schooling for the young is the best way for the young to spend their increased leisure, and society its increased wealth.

But schooling, as we know it, is not a complete environment giving all the necessary opportunities for becoming adult. School is a certain kind of environment: individualistic, oriented toward cognitive achievement, imposing dependency on the withholding authority and responsibility from those in the role of students. So long as school was short, and merely a supplement to the main activities of growing up, this mattered little. But school has expanded to fill the time that other activities once occupied, without substituting for them. These activities of a young person included the opportunities for responsible action, situations in which he came to have authority over matters that affected other persons, occasions in which he experienced the consequences of his own actions, and was strenghtened by facing them—in short all that is implied by "becoming adult" in matters other than gaining cognitive skills.

Nevertheless, as these activities outside the school dwindled, society's prescription for youth has been merely more of what was prescribed for them as children: more school. It appears reasonable now, however, to look a little more carefully at the task of becoming adult, to ask not the quantitative question, "How much more schooling?" but the qualitative one: "What are appropriate environments in which youth can best grow into adults?" It appears reasonable now, not merely to design new high schools and colleges, but to design environments that allow youth to be more than students. That these environments will include some schooling does not lessen the difference of this task from that of creating more schooling. It is the task, no more, no less, of creating the opportunities for youth to become adults in all ways, not merely intellective ones.[1]

Bruner has put it another way, "Our youth have become knowledge rich and experience poor."[2]

The nature of today's society has become one that has little use for the young in the labor force since most jobs require less muscle and more specific learning in the form of knowledge, skills, and often experience. The rapidity with which this has occurred may be showm by the deteriorating position of teenagers relative to the unemployment rate. "In 1930, the teenage rate was about one and a half times the national rate; by 1948 it had climbed to two and a half times the national rate; by 1963, it reached three times and in 1967, it was almost three and a half times as high as the national rate."[3] Today it is nearly four times the national rate.

"The United States, the richest country in the world with the most highly developed education system, has the poorest record of all advanced nations in providing effective bridges between school and work for the younger generation."[4]

In fact, one must ask if anyone or any agency has as yet even looked at the problem of transition from school to work.

"American education is designed for one basic purpose—to prepare the student for subsequent schooling. Actual practice shows far too little recognition of the role of the school in preparing students for citizenship and employment. Only at the graduate school level are employability skills given careful attention by the majority of instructors, and anyone who drops out of the educational stream prior to the graduate school is regarded as a failure."[5]

There can be no question about the specific problems of youth becoming employed or the fact that formal schooling has been extended for all young people. The question that must be considered is whether extended schooling is the only way to prepare youth for adulthood, and if work-experience learning is a better and more efficient way to learn many things needed to be adult and to actually try out what has already been learned in school.

A New Society and New Home

The premise of this paper is that work experience has become a mandatory learning process in view of the disappearance of the learning processes of the home and the community of the past; these learning experiences are now missing from the growing-up period of many youth and also absent from their formal education.

"The changes that have occurred in society and the home have created a situation which has made our youth economic liabilities instead of economic assets. These same changes have caused our youth to become isolated from adults, work, and most activity of the community. In short, we have, without intention, created a society where many of our youth have lost worth and dignity, and, thus, find few ways by which they can make the transition from youth to adulthood; from dependency to independence; from school to work; or from being unnecessary to becoming necessary.

We have not, as yet, developed a system or an institution which is even held responsible or accountable for providing the means or the process to assist our young to make this transition.

At one time the home, the community, the economy, and the nature of work all made the transition reasonable and simple. Schools were set up to assist in the process. Today, however, the schools more often prolong the youthful state rather than provide the means by which a transition can occur."[6]

"We have herded our young into a hostile youth culture by keeping them in resentful and babyish dependence at an age when previous generations of Americans were learning responsibility and self-reliance in the real world of work."[7]

Another observer of the problems of youth writes:

". . . the family has gone through two major transitions that sharply limit its training of the young. The first of these occurred when the father went out to work, into a shop or an office, and then began to carry out his major productive activtites away from home behind the closed door of an organization. The second occurred when mother went out to work or otherwise stopped carrying out her major activities in the home.

The young remained in the family but the activities from which they could learn have moved out; the activities from which the young could learn remain in the workplaces, but the young themselves have been excluded."[8]

Separation of School and Society

Before turning to the specifics of work experience learning, let me note a major aspect of the kind of learning which occurred in the home and work place, which has not been replaced by extending the school.

"It is learning which is variously called 'incidental learning' or 'experiential learning.' It is learning by acting and experiencing the consequences of that action. It is learning through occupying a role with responsibility for actions that affect others.

The transformation of the schools in response to society has had a consequence that is important . . . this is the massive enlargement of the *student* role of young persons, to fill the vacuum that the changes in the family and workplace created. Learning takes place not through experience as a responsible action, but through being taught as a student. There are some exceptions, but the general pattern followed is that of the classical school, in which a *teacher* is the medium through which learning is expected to take place. This replaces *action* as the medium through which learning had taken place in the family or the workplace."[9]

This separation of schooling and society is documented by a recent survey done by the American College Testing Service which found that 79% of the college and university students in the nation said their greatest problem was determining what they wanted "to do." But what may be even more indicative, for the purpose of this paper, is that 71% did not know where to go or how to get help in solving the problem![10]

Moving into Adulthood—How?

Let me describe a further societal change which has occurred and has created great confusion among both youth and adults in our country, and increasingly in other industrial countries. I refer to the concepts of transition from youth to adulthood as described by George W. Goethols.[11] He describes four basic processes by which past cultures have defined the "regular" ways youth become adults.

First

In all societies there is a time at which one is no longer recognized as a child, yet is not ready to be an adult. It is during this adolescent time that one passes through the critical "rites of passage" and suddenly becomes an adult.

Second

There is recognized by both adults and adolescents, through a reciprocal understanding, that a change has taken place. One has an identity as a youth. It is a process of society that recognizes the individual for what he is and knows that one must go through the process of adolescence. It is taken for granted by both community and the emerging individual, and it has a beginning and an end.

Third

All societies have exhibited authority or openly recognize the process of transition from youth to adulthood as a necessary part and thus a functional part of transition for everyone.

Fourth

All societies of the past have determined and enforced in the broadest terms the regulations of sexual behavior. Societies have prescribed in one way or another what is considered appropriate sex roles and mores both as to sex and as to age.

The purpose of presenting these four descriptions of adolescence development patterns is to point out that all these were defined and accepted processes or behaviors by which youth moved into adulthood. These have become blurred and no longer recognizable in our nation and in some developed nations. What are the recognized "rites of passage" today? What defines adolescence as a recognized role, and what experiences are accepted by both young and old? Who determines the process by which one becomes adult—family, church, school, community? Lastly, what are appropriate and acceptable sexual roles in today's culture?

It is highly unlikely that knowledge and cognitive learning alone can become the base for society's preparing the young to become adults. In effect what in the past was learned outside the school, in the home, the workplace and the community have been replaced by more formal schooling. It obviously is not adequate. More of the same will not do the job!

Schools Can't Do the Job Alone

As Willard Wirtz has said, "Attempts, therefore, at the solution of these serious problems and, specifically, those of 'work experience' and 'transition,' have shown three common characteristics. (1) . . . they have been directed almost entirely at those problems that show up in starkest form at the passage between school and jobs where the two would have traditionally been expected to meet; (2) their attempts at solution have been positioned within one of these two worlds, education alone; and (3) without exception, they have been limited to what can be done without disturbing the established institutional structure. By and large, the schools, the employment services, the unions, and the business corporations have been encouraged to do only more of the same kind of good that they have always been inclined to do."[12]

The purpose of the formal educational system was and is to prepare our young to be adults. Originally it was designed to provide those learnings not provided by the home, the church and the workplace. Most of the other learnings occurred experientially as part of the roles assigned to the young in a stable, nonchanging society. The learning experiences that related to work, responsibility, independence and the development of a sense of identity and self-esteem have been greatly reduced for all youth, and have disappeared for many.

We must conclude that our present institutions—home, school, community, and the work force—are not functioning effectively or cooperatively to help all kinds of youth to become functioning adults.

The schools then are an incomplete context for learning many important facets of maturing.

What we all hope is that our youth will come to have satisfactory competencies to develop a satisfying and contributing private life, public life, and work life.

Youth needs skills, knowledge and experience that Havighurst says fall into two broad classes, "those involving self-development and those involving other people." The Panel of Youth developed the objectives, and Havighurst summarized them as follows.[13]

Objectives of Self-Development

1. *Cognitive and noncognitive skills necessary for economic independence and for occupational competence.* We refer here not only to verbal and mathemati-

cal skills, but also to a variety of social skills and of manual and technical skills to fit the wide range of contemporary occupations.

2. *Capability for effective management of one's own affairs*. Self-direction and self-management are essential in a complex world.

3. *Capablility to engage in intense concentrated involvement in an activity*. Great accomplishments and small ones alike are personally satisfying when they grow out of "inner motivation"which propels the person and focuses his or her attention.

4. *Capabilities as a consumer, not only of goods, but more significantly of the cultural riches of civilization*. Enrichment of the entire adult life flows from the development of taste and understanding of art, literature, music and history.

Objectives of Social Relations

A range of types of involvement with other people is needed for the *social maturation* of youth.

5. *Experience with persons differing in social class, subculture and in age*. For a society which is committing itself to a democratic cultural pluralism, as ours is doing, it is essential that young people expand their social and moral horizon to include a concern for people with a diversity of life-styles.

6. *Experience of having others dependent on one's actions*. Full adult responsibility as a spouse, parent and citizen requires caring for others who need assistance.

7. *Experience of interdependent activities directed toward collective goals*. A healthy society requires cooperation and coordination of the activities of many people. The young person needs experience in the roles of leader and of follower.

As one reviews these objectives, it becames obvious that work experience may be one of the best ways to provide learning to achieve these objectives. It is obvious that the school cannot provide the environment for such experiences except in a limited way.

Relating Education and Work Experiences

Actually, a better approach would be developed by enlarging the concept of "work experience" in the lives of our young as it relates to their "educational experience." Prior to this time, and in the minds of most people, work experience has been simply training to improve an individual's present occupational skills, or a narrow and superficial experience to a related job area. Both are useful but they don't begin to encompass the potential of experiential learning in the work world.

Changes in both the nature of work and in the adult life role in our society suggest that basic changes be made in the relationship between schools and society. The present structure, organization, and schedule for both the school and the workplace make them unfit to prepare our youth for work and the transition from youth to adulthood, or, more precisely, from school to work.

The following ideas regarding work-experience learning is based on the foregoing concepts of school and society and the problems facing our youth. Certain premises must be stated upon which operational programs may be suggested. The premises are as follows:

1. All youth need work experience as part of the education for an adult role.
2. Specific planned transition assistance from school to work must be available when youth need to get work experience or to enter the work force full time.
3. Experiential learning is necessary in order to test the knowledge and understanding gained in school and, thus, must occur earlier and more often than it does today.
4. Education cannot provide adequate experiential learning in the schools, nor can it shift the responsibility to someone else or isolate it from learning in the schools.
5. The community, and particularly employers, must participate in the planning, implementation and evaluation of work experience and job placement in cooperation with the schools.
6. Greater flexibility must be achieved in all educational programs and in the workplace in order to provide adequate youth education.
7. Knowledge and skills now taught in the school can be better taught if students gain work experience and assistance in entering the work world so their knowledge and skills are used relative to their personal goals.
8. Support and action for such programs must come from the power structure within education and the community; it cannot be promoted by the specialists who must carry out the program.
9. An entry job is a means, not a goal—the goal is continued human learning and development and work that is worthwhile to the individual.
10. During their maturation years, our young need relationships with adults in our society other than parents, teachers, and "controllers" that now limit their experiences to home, school, and youth activities.

Varieties of Work Experience Learning

There are essentially four kinds of work-experience learning that have developed as career education has emerged.

1. *Orientation and Awareness*—an experience primarily to learn about work, the various kinds of careers and, essentially, how adults function in the work world and how education relates to work. It begins at the primary level.
2. *Exploration*—a work experience which allows the student to try out and explore various kinds of broad occupational areas and to learn of the knowledge, skills and competencies required in the occupation including those of basic education competencies, human relationships, and continued learning started at the middle school level for many students.
3. *Employability Learning*—work experience in which one learns the various skills that all work requires and begins to experience the reality of rewards and penalties for responsibility action. Where possible, a relationship to career educational goals is desirable.
4. *Job-Skill Development*—an order of work-experience learning requiring the specific application of knowledge and skills on a job where one gains

additional knowledge and skills in a specific job area. In all cases this should be related to career and educational plans, or, perhaps, a culmination of both schooling and work experience.

A New Work Ethic

These four are merely the tip of the iceberg insofar as work-experience learning is concerned and generelly refer to the formal process of schooling and relating the learning to career development, planning and preparation. Despite these concerns for a future formal work role, there are other major concerns that seem to be becoming more significant for our young. These concerns are with finding work roles and careers that allow for creativity and learning; one of the major needs for many is to help others and to improve the quality of life.

This meaning for work implies also that many youth have rising expectations regarding their education and its ability to prepare them to assume such adult work roles.

In effect, there is an emerging work ethic that expects to find a place between life and work. Work is being viewed as an integral part of one's total life, not just a means to an end. Many of our young are not ready to see work take priority over all family relations and other human needs. It appears that this choice is a more realistic one today than in previous generations.

The point is, however, that regardless of an individual's desires or goals, and regardless of the realities of present or future work, formal preparation for adulthood involves making choices in terms of the realities regarding oneself and the realities of the work world. The degree to which the young person knows what the real world is like and can make adjustments to his plans to live in it and to improve it—to that degree he can function more effectively as an adult.

What schools must do, then, is to provide the learning experiences in the world of work which can be predicted to have a good and lasting effect.

Work-experience learning, then, is learning from experience in the work world that relates learning in the school to the work world, and relates actual experience to the need for more knowledge and theory; it may provide educational credit to the learner.

Such experiential learning would embrace the four kinds of work experience listed earlier but would in addition provide opportunities to be carried out consistent with the ten earlier operational premises for program development.

Thus, work experience learning becomes much more than developing, planning and preparing for an adult work role—it can become another way that youth achieves many learnings necessary to become adult in his work life as well as his personal and public life.

Opportunities for Work Experience Learning

What are some of these work experience learning opportunities?

1. The young may test their own knowledge, skill and understanding in the real world and not in an institutional setting.
2. The young may be involved in "consequential" activities that make a difference to society.

3. Youth may work with other adults on a "peer basis" and not in the usual child, student or dependency role.
4. Youth may begin to assume responsibility for the welfare of others directly and thus to learn the rewards and penalties that full responsibility entails.
5. Youth may be motivated to learn more in order to do what they want to do and be what they want to be.
6. Youth use what is already learned to reinforce what has been learned and reduce the rate of forgetting.
7. Youth have the opportunity to try out new societal roles from a new viewpoint and thus develop new perspectives and judgments which cannot be gained in school.
8. The school has the opportunity to match these work experiences with the developmental needs of the individual and thus help in the transition to adulthood.
9. The school has an opportunity to extend the individualization of the learner in the uniqueness and variety of work situations.

"Action-learning comes well recommended in several recent reports on adolescence and youth.* But there have been only a few comprehensive studies of action-learning programs and these have produced little evidence that action-learning has so far done what is claimed for it. The contract, however, has face validity in that the kinds of experience typical of action-learning programs appear to be related directly to the development of more mature behavior, as well as to greater knowledge of the world of work and social relations. But the criteria for judging the success of such programs have neither been clearly stated nor generally agreed upon."[14]

The usual ways of judging the success of most work or experiential related learning have been in terms of its use on the job or job related rather than to changes in the individual and his ability to learn or develop. Most measurement has related to income, job success or vocational choice. It can be observed that in all work experience learning programs it is necessary to individualize the experience, but there have been few attempts to individualize the work learning in terms of the experience that best fits the individual related to his maturity and in relationship to formal schooling and other learning of the individual.

The need for work experience learning, thus, has evolved from changes in the society and the ways that our youth have to gain necessary experience in the real world in relation to formal education which has now been extended through high school and beyond for most young people. Also, the nature of work has changed so that most of it now requires cognitive as well as technical knowledge and skills.

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*James S. Coleman (Chairman), *Youth: Transition to Adulthood*, Report in the Panel on Youth of the Presidents Science Advisory Committee, (Chicago: University of Chicago Press, 1974); National Commission on the Reform of Secondary Education, *The Reform of Secondary Education* (New York: McGraw-Hill, 1973); National Panel on High Schools and Adolescent Education, report in draft as of February 1, 1973 (Washington, D.C.: U.S. Office of Education); *The Greening of the High School*, ed. Ruth Weinstock (New York: New York Educational Laboratory, 1973); Robert J. Havighurst, Richard Graham, and Donald Eberly, "American Youth in the Mid-Seventies," *Bulletin of the National Association of Secondary School Principals*, 56 (November 1972), 1-13.

John Dewey long ago defined a good experience as one that leads to other good experiences.[15] He also pointed out that all experience was not necessarily good, but what made it good was its meeting the needs of the individual.

It would thus appear that work experience learning must be organized and structured as part of the education of our young, and there are many possibilities for providing work experience learning for most youth.

Programs in Place

What are the possibilities?

First

The usual cooperative education, work study, on the job training, internships, service type work and the more total efforts of the Job Corps, residentiai and custodial instructional work experience programs. Most of these, however are limited to and designed for the development of specific work and job skills.

Second

The broader exploratory types of career exploration and work orientation planned at the elementary and middle schools. At the higher levels these may be called variously "stop out programs," "work maturation" and development work experiences.

Third

What has been briefly tried but seldom instituted as part of a work experience learning approach, is that of serving other students in the form of tutoring, teaching and using one's knowledge and skills to help those who need special help. Such an approach may have the double benefits of providing services desperately needed, developing skills and knowledge, and providing experiences that lead to understanding of possible career choices and goals as well as developing worth and dignity for the student worker.

Fourth

The provision of work experience learning through self-study and work through cooperative planned entrepreneurial efforts, through the development of contract services, small business production and sales and other real production-for-pay work efforts where youth earns and learns through direct sales of single or group services and products. Junior Achievement is an example of this approach, but rather a make-believe one.

Fifth

Joint partnership between employers and schools, where the employer furnishes work experience and guidance to potential employees and workers as a coopertative effort with a specific school partner.

Sixth

Experience Based Career Education programs where older high school students spend up to four days a week for up to 13 weeks at a work learning site, and one day in school each week.

Seventh

Operation of full-time placement service by the schools to provide work experience learning and entry into the work force at the time of school-leaving and for other kinds of work experience learning in the community and with social agencies. The development of this kind of service is a capstone to the concept of "use of knowledge" having equal dignity to the "search for knowledge."

Wirtz has said that the problems of transition are some of the greatest faced by our youth.

"The place to start a more productive interrelating of education and work remains at the critical passage through which young people move from school to jobs. This is not where the real roots of the difficulty lie, but it is here that the gap between the two worlds is now more clearly perceived. It is here that the problems surface in a way they can be dealt with. And it is here that processes can be readily designed that, while meeting immediate needs, are of a nature to permit later application to the deeper causes and long-range prospects. It is at the youth passage that we have had the most institutional experience, and it will be out of that experience, rather than from any broader logic, that more comprehensive programs will take shape."[16]

Eighth

Opportunities which allow our youngsters to make the school a place where they have a great deal more opportunity and responsibility for the operation, maintenance, teaching, tutoring and managing of the school itself.

Few educators have really looked at the possibility of using the underutilized talents, knowledge and skills of our youth as responsible contributors to the education of the younger children and as contributors to the operation of the schools. Such a concept may be the way to demonstrate to the community that it may become better able to use student work experience learning within their units to benefit the young and themselves.

The Role of the State Department of Education

Most local educators want to do the right thing and certainly want to know what the more effective learning approaches might be as seen by the priority setting and operational regulations of the state.

The key to expanding work experience learning is, of course, to find a way to make it politically and programmatically operational as well as good education theory.

A work role is seen as a necessary, desirable and often creative opportunity in our culture. Preparation for work and developing career plans and goals are all socially acceptable and today can be closely related to basic education and skill development. Experience has long been and is today even more recognized as a necessary, even a top priority need for our young.

The concept of work experience learning has thus reached a point where sound educators may support it as a needed addition to educate and develop the individual as well as contribute to the improvement of society. *It is saleable as well as sound.*

What are some of the things that are needed to help the local school districts, and even more directly the local school building unit, move into work experience learning?

1. *Leadership and Priority Setting*

The state department through state board policy and action, followed by departmental position and priority setting statements, must make such learning methods acceptable and respected by the top education authority in each state.

2. *Flexibility*

The school year, graduation requirements, length of school day, class periods and often place and time for educating are prescribed by state law, regulation, understanding, and misunderstanding.

3. *Financing*

Most states still fund the local school districts based on a fixed school year, number of days, or teacher and class units. Until there are alternative ways to secure local financing from the state, the local educators in some cases would be foolish to try new learning techniques.

Each state ought to study the financing patterns of their state to find the restrictions these financing methods place upon new learning procedures. Such a study should suggest alternative or new ways that would encourage alternative learning approaches and provide start-up or seed money to priorities set by the state. Such approaches ought to do more than simply look at the development of new projects, but go far enough to look at new ways of financing that reorganize and encourage new structure, flexibility, and efficiency for learning in an individual school or a total school system.

4. *Graduation Requirements and Competencies*

Much of the concern about the transition of youth to adulthood, declining SAT scores, youth unemployment, and other symptoms of youth problems has shown up in the form of *more rigid time* or graduation credit requirements by states. The very problem often causes application of more of the method that has not been effective.

What is needed are alternatives to the requirements which are applied to each youth without exception and regardless of individual goals and abilities.

Alternative patterns to reach graduation requirements and competencies need to be prescribed in order to allow the local school, parent, youth and teachers to plan an approach that will work for more students.

Such alternatives may be in terms of time, credit by examination, experiencial learning, less than full-time attendance, early graduations and many others that might be considered, with each student being accountable for certain minimum competencies at the time of receiving a diploma or certificate. To hold all youth to the same method, the same time frame and the same competencies is to fly in the face of all we know about how individuals learn and how they differ.

5. *Labor and Youth Legislation*

Over the past several decades, legislation has been passed to protect the young from exploitation in the labor market, which needed the muscles provided by the young. The pattern has changed to the point that muscles are not valuable today, and we have the highest youth unemployment rate of any nation.

The situation has not been seriously studied in terms of how we give youth a chance to get experience in the work force in order to try out and test the knowledge they are learning in school.

Each state ought to follow through on the study soon to be reported by The National Manpower Institute to see what laws and departmental regulations in their state prevent youth participation in real work experience. The next step that should be taken would be to suggest new legislation and changes needed to allow greater flexibility in the educational system and in the employer place of work specifically designed to assist youth in gaining experience.

6. *Risks and Insurance*

Many practicing educators are very much concerned, as are employers, about possible injury to youth in the work experience situation. Each state should explore ways to provide insurance coverage for learning taking place in the work setting—apart from or in addition to the traditional worker compensation patterns now in force.

If a solution to this concern can be worked out, it would allow many local school units to proceed without reservation. We have worked it out for athletics, where the danger is much greater.

7. *Encouragement of Innovation*

Many funds available in the past several years have been aimed at separate innovative or experimental projects. What is needed are creative approaches to funding innovations aimed at fundamental change in the total educational unit, changes emanating from the policy and regulatory bodies and thus aimed at changing total approaches to learning rather then just one part, such as method.

New Ways for New Days

What is needed for the development of work experience learning is a new look at a total approach to education:

(a) relating work experience to school learning,
(b) developing alternative ways to graduation and minimum competencies,
(c) individualizing learning,
(d) making school programs and schedules flexible to meet individualized learning needs,
(e) providing for greater youth participation in the operation and instruction in the schools,
(f) evaluating experiential learning and giving credit,
(g) working out cooperative arrangements with employers and other agencies for the education of our young.

Work experience learning is not a panacea for the education of our young, but it is equally obvious that simply more schooling is not. Today, most opportunities for learning and applying knowledge and skills exist outside the formal education structure.

We must find better ways to join the learning environments to better prepare our youth to meet a future that cannot be predicted as in the past.

Clearly, needs for participating experiences in which responsibility-taking, reality testing, applied learning, goal-setting, and career planning exist for many students. There are skills which cannot be learned in the passive role of student in the traditional school setting. State departments of education must give leadership to support and develop a format to combine cognitive and experiential learning to meet the total needs of students who must move into a society quite different from the setting of traditional schooling.

FOOTNOTES

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Chapter VII

DECLINING SCORES: IMPLICATIONS FOR EDUCATION AND EVALUATION

S. P. Marland, Jr.
President, College Entrance Examination Board

For better or for worse, the College Board, where I work, is inextricably linked with your professional lives as Chief State School Officers. We are, in a sense, like the Bell Telephone System—we serve you, sometimes well, sometimes inadequately—but we are present in the files of your offices, and in the lives of your students and their families to a degree that is, perhaps, awesome. My basic assignment today is to discuss the score decline in the Scholastic Aptitude Test, and its implications for education and evaluation. I will come to that—but it is obviously only one aspect of the weighty and pervasive "public utility" that the College Board has become. And the College Board, quite apart from its tests, itself is deeply imbedded in the education system and the society in which we all find ourselves today.

As you may know, the Board this year has been celebrating its 75th anniversary as a voluntary and nongovernmental agency, unique in the way it serves to link and articulate school and college concerns and interests. At our annual meeting last fall in New York, my good friend and colleague, Joe Nyquist, presented to the membership a citation and message of commendation from the Regents of the State University of New York, under the charter of which the Board exists. That citation, I believe, helps us set the scene for some of our considerations today, and, in part, recalls that during the 1890's a form of crisis existed in American education when each college had its own standard for admission, its own examinations, and practices. Colleges could neither agree on subjects to be offered for admission nor even upon content learnings within the subjects. Under the leadership of President Nicholas Murray Butler of Columbia and Charles W. Eliot of Harvard, secondary school and college administrators met and drew up the agreements that formed the groundwork for the establishment of the CEEB in 1900. School administrators, working through the National Education Association, played a key role in the Board's founding. Then, as now, its basic purpose was to provide solutions to the problems of transition from school to college, through uniform and mutually established criteria.

Then, as now, there was great concern over the question of standards and of measurement. Butler told an early audience in 1901 that the creation of the new organization meant "the breaking down of untold barriers to sound secondary and collegiate education by carrying high and well-defined standards of teaching and of testing into secondary schools, public and private, in every part of the United States." Butler's glowing appraisal greatly overstates the influence of CEEB, then, or now, in the domain of standard setting. We should perhaps recall that postsecondary education in those days was the privilege and almost private domain of a relatively tiny few—4% of the age group, a point that I will expand on a bit later. In those days, Board membership consisted of only twelve collegiate members, mostly private, selective institutions.

In 1901, Thomas Fiske, a mathematician who was subsequently to become Secretary of the Board, pointed out that the chief aim of the new organization was "to secure *by means of cooperation* between all those vitally interested that uniformity of standards which is essential for the general systematic improvement of the conditions of secondary education."

I cite briefly these early precedents as background and to indicate to you the long-standing nature of the Board's benign and, I trust, constructive involvement in and concern for cooperative efforts on behalf of improving both equality of access and fairness in education assessment.

It is not my purpose here to pursue the history and enormous growth and diversification of the College Board—especially during the modern era, from about 1960, when the spectacular changes in college-going occurred in our population. I would only sketch in the bare outlines of the Board as it affects you and your states today for an understanding of its scope that I did not comprehend when I joined about 3 years ago. Fully a third of all your 1976 high school graduates took the SAT this year, a total of over a million candidates. They comprise over two-thirds of all this fall's entering college freshmen. Nearly another million high school juniors and sophomores took the PSAT/NMSQT this

SAT TAKERS AS A PERCENTAGE OF 18-YEAR OLDS
IN THE FOLLOWING OCTOBER, HIGH SCHOOL GRADUATES,
AND IMMEDIATE COLLEGE ENTRANTS FROM 1958-59 TO 1973-74

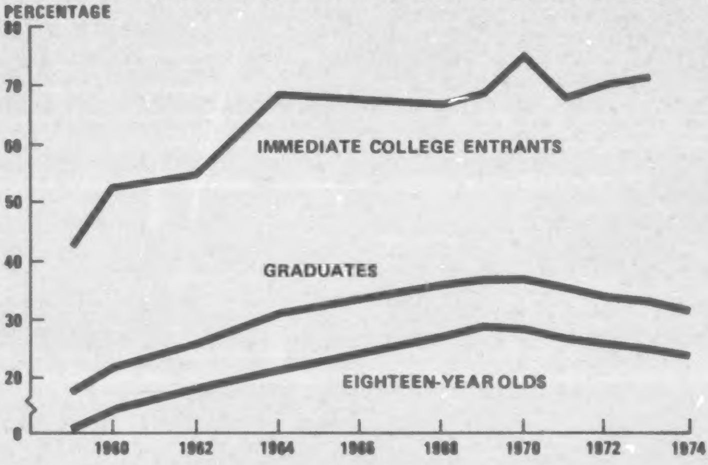


Figure 1

Source: Harnischfeger-Wiley: *Achievement Test Score Decline: Do We Need to Worry?*

past year, as a guidance and scholarship screening instrument, and to ameliorate in a way the buck fever of the SAT itself.

In addition, there were 228,000 tests of academic achievement, ranging from calculus to Hebrew, and from chemistry to European history. And it should be noted carefully in passing that whatever our perception may be, these achievement tests, all prepared by committees of school and college teachers, do form a system of standard setting, albeit voluntary and inadvertent. As a brief aside, I would note that from the wealth of data provided to us voluntarily by SAT candidates through the Student Descriptive Questionnaire we are able to perceive each year, on a national scale, some of the trends in the goals, interests, aspirations and career plans for a million students. This is very powerful information, once collated and analyzed. As you know, each of you in turn receives in your state a specially-produced state report delineating these characteristics from your own candidate population, and, of course, the state reports also include complete academic data as well. Commenting on just a few highlights from the national summary data, recent research by our colleagues at Educational Testing Service on the ATP population over the past five years shows interesting changes, some of which may well have bearing on the score decline phenomenon that we will be discussing shortly.

Students taking *both* SAT and achievement tests tend to be those with higher SAT scores . . . the average for those taking both is 535, while for those taking SAT *only* is 451. Looking at specific fields of interest, students with highest averages (645) in the SAT-M tend to be those planning careers in physics; close behind are those interested in chemical engineering (605 averages) and nuclear technology (602). Those planning careers in classical languages have SAT-V averages of 542; foreign service 537; and literature 530.

Two more comments on achievement tests; the volume has been declining steadily in the past five years, and from 1972 to 1975 went down about 32 percent. The reasons for this are complex, bearing in part on slackening of college-entrance requirements as colleges compete for students. The most-taken achievement tests this past year were English composition, Math Level I, American history, and biology. The interest in foreign language study continues to wane, I am unhappy to report.

Our observations about career plans and fields of interest coincide closely with those of Alexander Astin, gathered from some 300,000 college freshmen on behalf of the American Council in Education last fall. The ACE survey found a rising interest by women in careers in business, law, engineering, and medicine. Ten years ago, just under 6 percent of the women were interested in these professional fields, whereas in 1975, 17 percent indicated plans to enter these areas. Conversely, half of the men in 1966 said they would follow careers in business, law, engineering or medicine, and this past fall only 39 percent had similar plans. In education, a field we all follow closely, 21 percent of all surveyed in 1966 said they planned to be teachers. In 1975 that figure was down, as the market suggests, to 6.5 percent, a decrease of more than two-thirds. Finally, the ACE data showed a decline of planned majors in the humanities from 22 percent in 1966 to 10 percent in 1975. This, too, I find distressing, for the implied reason that young people are searching for more occupationally-oriented outcomes at the expense of the liberal arts. (As you know, career education seeks to redress this trend by adapting the liberal arts to occupational interests in ways that will sustain the high place of liberal arts as basic to our total educational philosophy and still serve the useful outcomes now being sought by students.)

The College Board's ATP data over the past five years show similar movement toward careers in health and medicine, for instance with 23 percent of the women candidates selecting these as intended fields of study and 11.6 percent of the men. Business and commerce followed, with education and engineering selected in smaller proportions.

Quite apart from the academic domain, but in many ways integrally related, our College Scholarship Service reaches with equal pervasiveness into the families of over half a million of your seniors each year as they respond to opportunities for student financial aid through the Parents' Confidential Statement. Counting all financial aid applicants (excluding individual Basic Opportunity Grant applications), and including those already in college, we reach about 70 percent of all those who seek student aid. Under the CCS system, we affected the distribution of an estimated $5 billion in last year's administration. Again, this is a form of standard setting, based upon uniform and annually adjusted yardsticks to take account as fairly as possible of the family's resources.

Beyond the well-known programs, the College Board serves, as many of you know, the gifted and talented through the Advanced Placement Program, and the independent adult learner through the College-Level Examination Program. In total, we touched the lives of over 4 million students last year. Among our new services under research and development is a set of assessments of career education outcomes. The states of Georgia, Maryland, Minnesota, New Jersey and Ohio are engaged with us in jointly supporting this development work, some products of which are now expected by the spring of 1977.

For all our numbers and for all our pervasiveness, we fortunately are not a monopoly. Very intense competition for admissions and financial aid services is afforded by the American College Testing program, for which we have real and continuing respect.

But, notwithstanding the ACT competition, there is a constant need for the Board to be absolutely and maximally accountable to the institutions, the states and the individuals that we serve, and it is in this context that I particularly welcome this opportunity to be personally accountable to you, the principal executives in charge of education in America. While many of you are closely involved with the Board, and while all of you have systems or individual schools within your jurisdiction that are actual members, and therefore govern the Board, this is, as far as I can learn, the first chance for the Board to report directly to all the Chiefs, and to undergo such cross-examination as you may choose to conduct.

I think we all have come to learn from our own research and experience that developments and change in educaion come slowly, often taking as long as a generation for new ideas and concepts to become even noticeably integrated with practices and in usage.

Our primary concern this afternoon, the real decline in test scores and the apparent decline in students' measured abilities over the past ten years or so, offers an excellent example, perhaps, of this lag in timing which results from the working of complex educational, social, economic and demographic forces. And it also suggests to us that we might do well to consider much more carefully advance planning and long-range forecasting in areas of our responsibility. While looking backward is both necessary and important, we must look ahead with as much vision and wisdom as possible, not simply to await the future, but to reach out and shape it.

As I move toward my specific assignment, let me then offer a brief exercise which will help develop a bit more context for the populations we are considering, for the Admissions Testing Program of the College Board, and for the SAT itself and the related services supporting it.

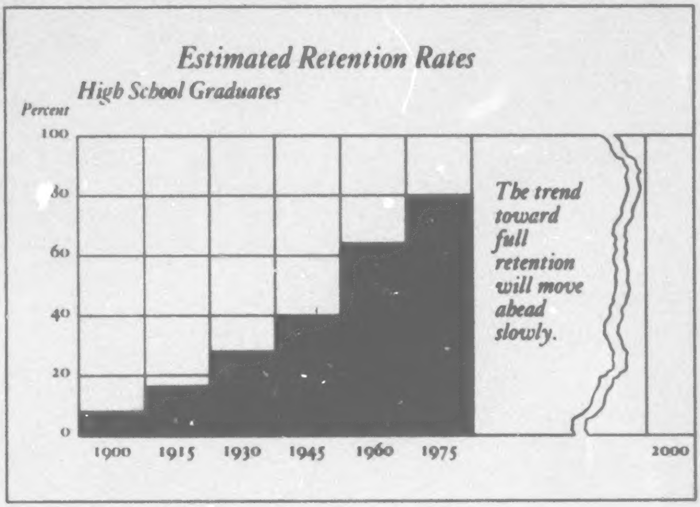
While you and I as responsible educators must be concerned with today's immediate crises and plans for tomorrow's budgeting, political actions, personnel challenges, and all the infinite problems facing professional administrators and managers, we are also concerned, and rightly so, with the quality of life and of education in the generation yet to come—the remaining years of this century. Our actions today and tomorrow, and our planning for the day after tomorrow will have a vital effect on all those young students now rising through the elementary and secondary grades, those who will be the shapers and leaders of the new century. As we contemplate postsecondary education, the quality, qualifications, and plans of students, the nature of evaluation, and the consequent implications for schools and colleges, and for the transition between, it is useful to think for a moment about the life and circumstances just ahead. What will our population be like, what will the labor market be, what will be the needs of the professions, business, and industry? What deep social issues such as social inequality, economic despair, unemployment and underemployment will remain, or be in the process of correction?

Roy Amara of the California-Based Institute for the Future has recently sketched in some of the boundaries and suggested some of the directions, based on demographic data. He projects the U.S. population as growing from 213 million now to about 230 million by 1985, a relatively slow rate if less than 1 percent a year. He notes, however, that one of the largest age groups (which I will illustrate for you in a moment) will be that ranging from 20-40 years of age, some 80 million . . . and within that group lies the potential for a high rate of formation of new households. Amara sees a larger percent of women in the labor force, going up from the present 43 percent to near 50 percent by 1985, with more and more women (as our ATP data have indicated) in the roles of managers and professionals. He sees a slow growth of the GNP at about 3 percent yearly, and figures for the first half of 1976 indicate his correctness on this, as the rapid rate has slowed. In education, Amara indicates a slackening in the rush for credentialism, but sees the profile of an average employee in 1985 as including high school graduation plus one year of postsecondary preparation of one kind or another; and he sees the proportion of the population with one or more years of college as rising from the present 25 percent to about 33 percent. These projections are close-in at nine years from now (1985).

Some of my own projections (made last fall) might help provide the basis for later discussion, too. I will use a few illustrations (slides) to amplify these comments.

I would suggest first of all that we will see a continuing trend toward full retention through 12 years of secondary school, but at a somewhat slower rate of

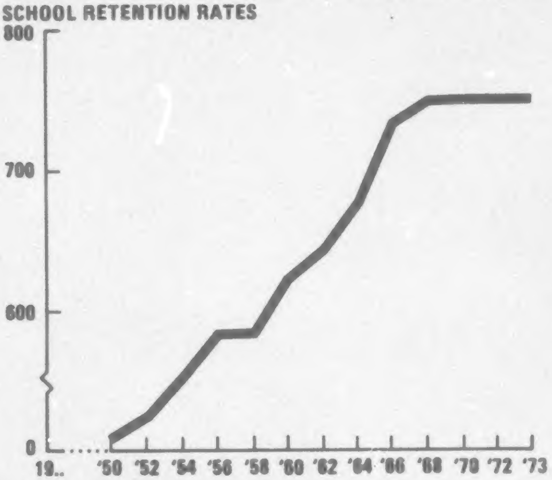
Figure 2



The trend toward full retention will move ahead slowly.

Figure 3

SCHOOL RETENTION RATES: HIGH SCHOOL GRADUATES PER 1,000 PUPILS WHO ENTERED 5TH GRADE



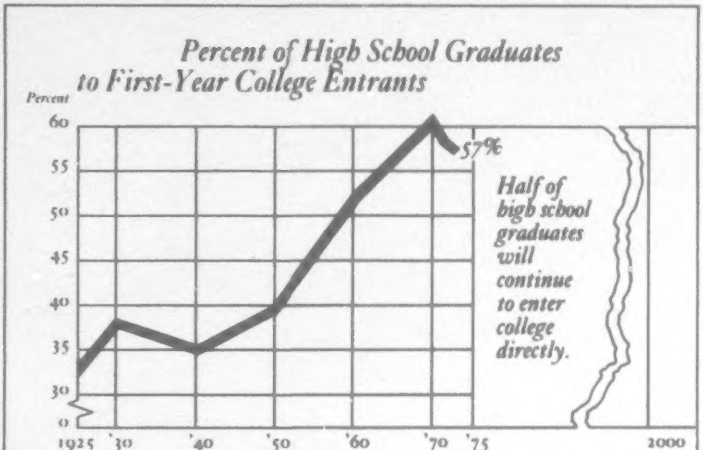
Source: Harnischfeger-Wiley: *Achievement Test Score Decline: Do We Need to Worry?*

increase. Retention obviously derives from a range of factors, not the least of which will be intensified by personal needs of learners for occupatioal development in the technological marketplace and by the improved attitudes and resources of schools for readying young people for work as well as for college. The encouraging trends in black student entry to college points favorably in this direction. This entire picture of increased retention, and increased access to college suggests at least a partial explanation of the score decline.

The reasonably available state and federal programs of financial aid, the rapid rise of the two-year college, and the upgrading of qualifications for some careers have all played their role in the move I see toward increased retention—and will keep on influencing it in the years ahead. I can see the standard sequence of 12 or 13 years of common schooling becoming less fixed and rigid with more young people moving in and out without social disapproval, and the rigid time dimensions symbolized by "grade 12" diminishing. Learners may well choose occupations by the end of grade 10 and go on to work (as they are doing in California, with policy approval) but remain in formal and informal relationships with education with a variety of options. The discernible effects of career education as a reform concept in both schools and colleges will facilitate this flow from education to work and back.

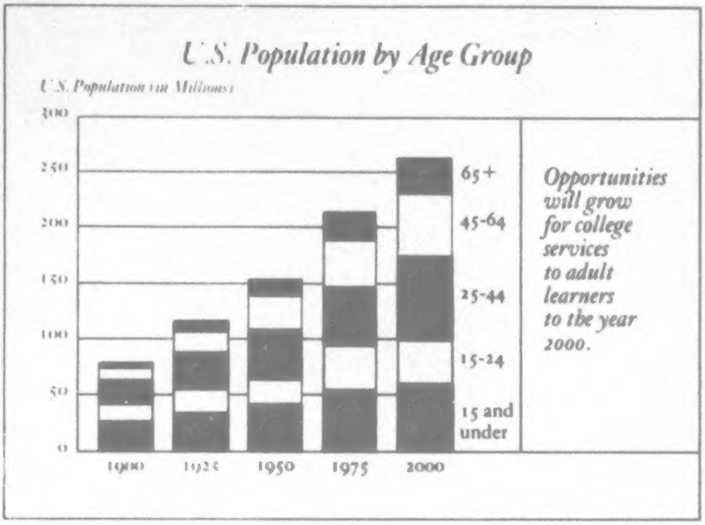
Secondly, I foresee a continuing pattern of high school graduates proceeding directly to college at about the 50 percent level. From time to time this appears a risky projection, but in mid-July, studies issued by the New York State Education Department showed that just over 67 percent of that state's high school graduates were continuing with some form of postsecondary education in the fall of 1975, compared with 66 percent the year before. New York is a high college entry state, offsetting some others, to affirm the 50 percent average.

Figure 4



As suggested a moment ago, the varied levels of maturity, economic differences, and occupational motivations will blur the specificity of transition from grade 12 to college, and I think we will also see numbers of the "other 50 percent" seeking postsecondary learning at a later date. Heretofore excluded, they will be older, highly motivated, and purposeful in their aspirations, stimulated by occupational aspirations as well as general humanistic education.

Figure 5



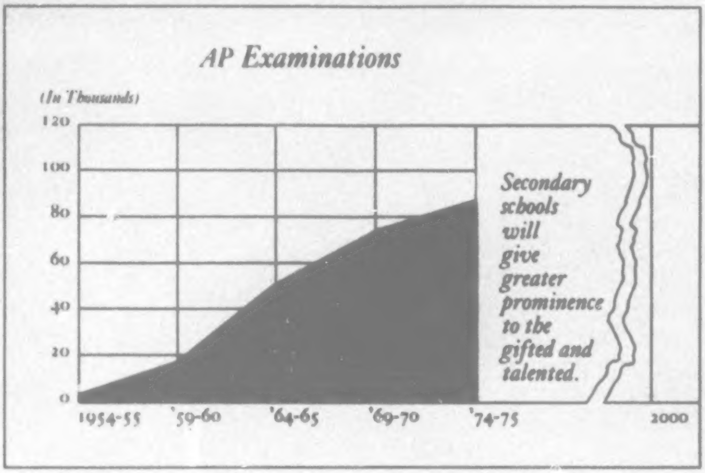
U.S. Population by Age Group

Opportunities will grow for college services to adult learners to the year 2000.

My next speculation deals with the adult learning society (age 25 and over) which, I believe, will increasingly call for educational services in the next decade or two. Many institutions, schools, colleges—and the College Board—will be working to increase the ease of access and the responsiveness of program options for the adult learner. Expectations will derive from increased leisure, occupational needs, and both intellectual and cultural aspirations. Manifestations of these already exist in the form of open universities, and in the exploration of the whole important area of experiential learning and of competency-based examinations, to which we will refer later. As the slide indicates, the large bulge will come in the age groups from 25 to 64, and this group may well help offset the declining birth rate that has been with us for some years now with its implicit threat to some colleges. I can see the corporation, the library, the trade union, the commumity itself—and certainly the state educational structure, all developing greater interest in and capacity for serving the new breed of learners. No doubt state-supported agencies and many secondary schools will be a part of this new trend.

This next illustration shows the increasing trend toward college credit by examination for the able and ambitious high school student. I will touch only briefly on what it connotes. The steady growth of Advanced Placement in the past twenty years, as graphically shown, has only touched the surface of the pool of gifted and talented students, which I estimate to be about 700,000 eleventh and twelfth graders, or 10 percent of the enrollment. As you can see, AP now approaches only 100,000 in its volume, with much latitude to expand.

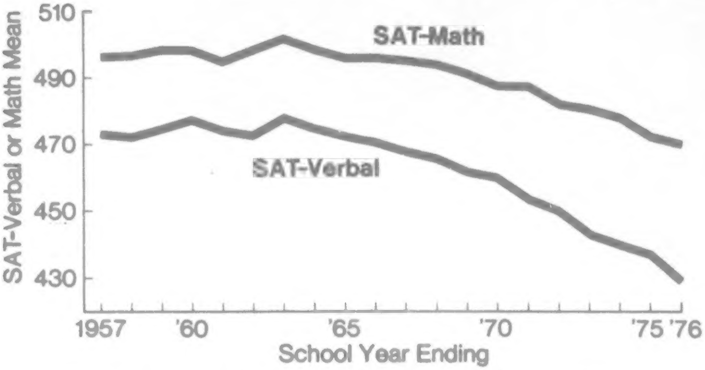
Figure 6


AP Examinations

Thus we see, in capsule form, some of the shapes and directions for education that may lie just ahead. Clearly, they will be affected by a number of factors—economic, political, demographic and personal. Clearly, the portents of score declines, and the related issues of educational outcomes, of measurement, and of standards will all have direct bearing on the nature, style, and effectiveness of our schools and our colleges in the next few years.

SAT-Verbal and Math Means for the Period 1957-1976*

Figure 7



*These means represent all scores reported. Thus, persons having more than one score are counted more than once.

Education, as we all know so well, operates increasingly in the public and political arena, under the glare of accountability, bathed in sunshine laws, with our antennae constantly sensitive to a hundred forces and a thousand voices, all asking for response.

This in large measure is probably why the whole SAT score decline phenomenon has gained such public attention in the past year. There has been no single issue in the memory of the College Board that has elicited such widespread interest by the mass media and the public at large. Recent disclosure of urban scores through an unauthorized Knight newspaper article has added to the tension, giving prominence to the correlation between black population in some urban centers, and the score decline. Some months ago, the Washington *Post* summarized rather well the general speculative appeal:

"The decline in college entrance scores throughout the country offers an irresistible opportunity to all the philosophers of American culture. Since nobody knows why the scores are dropping, you can pick whichever explanation you like best with the assurance that it's as defensible as any other. You won't often get a chance like this one."

In the quarter century following World War II, and especially in the last decade, we have seen a swift rise in the secondary school retention rate. We have also seen a sharp climb in the numbers and percentages of those going on to college. This combination of factors has, of course, brought about dramatic growth in the volume of SAT candidates.

During the past dozen years or so, this growing poulation has also tended to include larger numbers of students from limited socioeconomic backgrounds, including ethnic minorities, and this has played a role in the score decline.

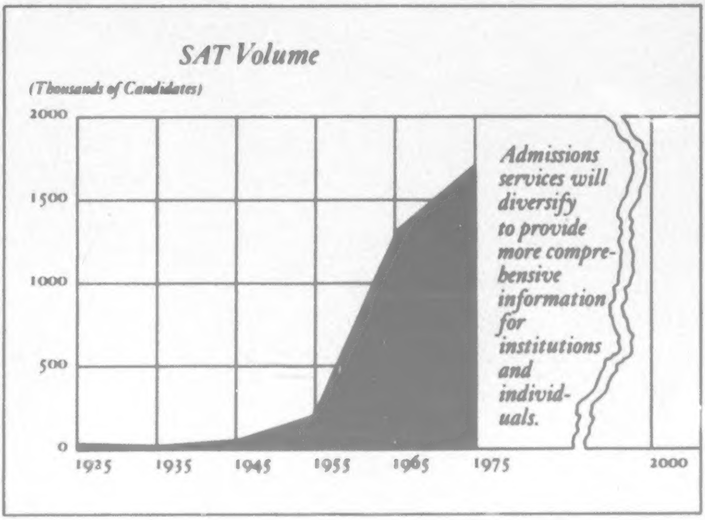


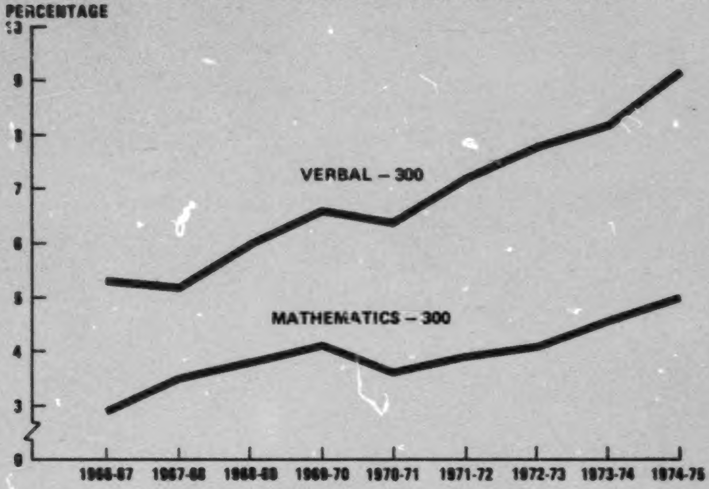
Figure 8

Consider, for instance, this illustration which shows what has happened to students scoring below 300 on the SAT.

However, this is only a part of the story. The next illustration deals with the other end of the spectrum, students scoring above 600 on the SAT, and it is clear that here, too, the decline is having an effect.

Figure 9

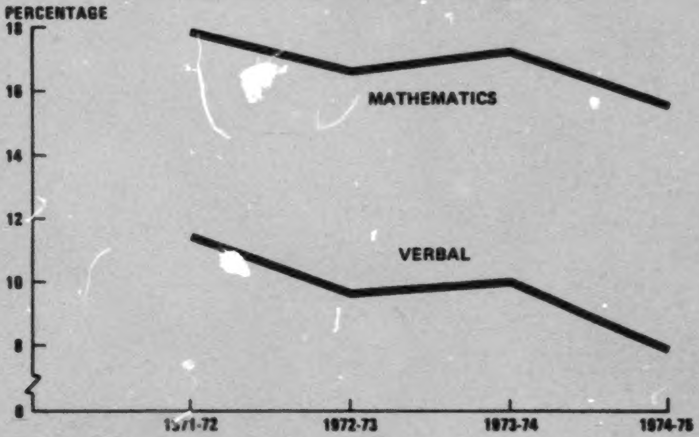
PERCENTAGE OF SAT CANDIDATES BY YEAR WHO SCORED BELOW 300 ON THE MATHEMATICS AND VERBAL SUBTESTS



Source: Harnischfeger-Wiley: *Achievement Test Score Decline: Do We Need to Worry?*

Figure 10

PERCENTAGE OF COLLEGE-BOUND SENIORS FROM 1971/72 TO 1974/75 WHO SCORED AT OR ABOVE 600 ON SAT VERBAL AND MATHEMATICS SUBTESTS



Source: Harnischfeger-Wiley: *Achievement Test Score Decline: Do We Need to Worry?*

As we all know, the decline in SAT scores is not taking place in isolation. It seems to be a part of a broad decline in measured academic abilities across the country and over a span of time. You are well aware of this situation, but let me just review some of the other evidence that has been coming in. ACT scores have in the past ten years also experienced the same kind of slide. ACT composite average scores went down 1.2 standard scores, or about one-fifth of a standard deviation of the overall distribution of scores. On a per-year basis the average ACT decline is about 2 percent of a standard deviation. These four illustrations document the ACT decline in English, social studies, mathematics, and natural sciences respectively.

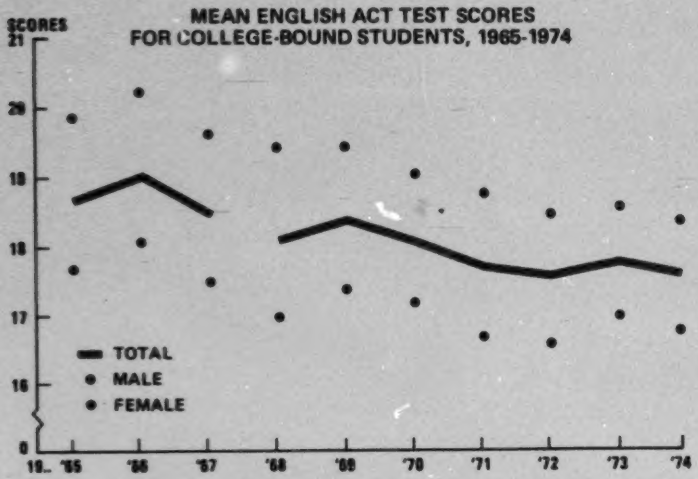

MEAN ENGLISH ACT TEST SCORES
FOR COLLEGE-BOUND STUDENTS, 1965-1974

Figure 11

Source: Harnischfeger-Wiley: *Achievement Test Score Decline: Do We Need to Worry?*

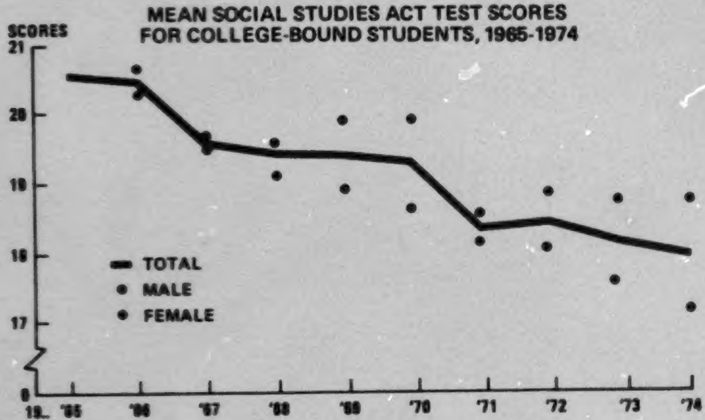
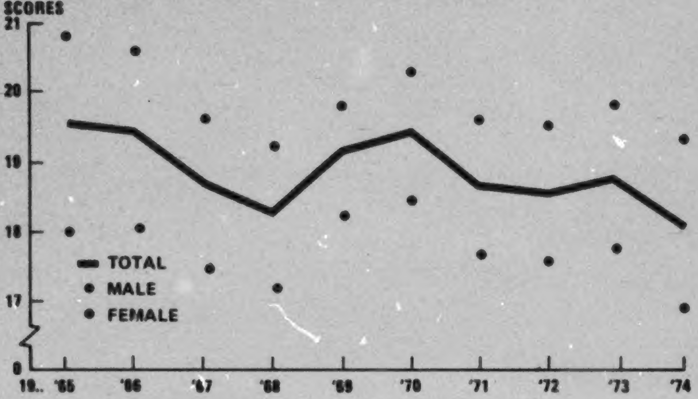

MEAN SOCIAL STUDIES ACT TEST SCORES
FOR COLLEGE-BOUND STUDENTS, 1965-1974

Figure 12

Source: Harnischfeger-Wiley: *Achievement Test Score Decline: Do We Need to Worry?*

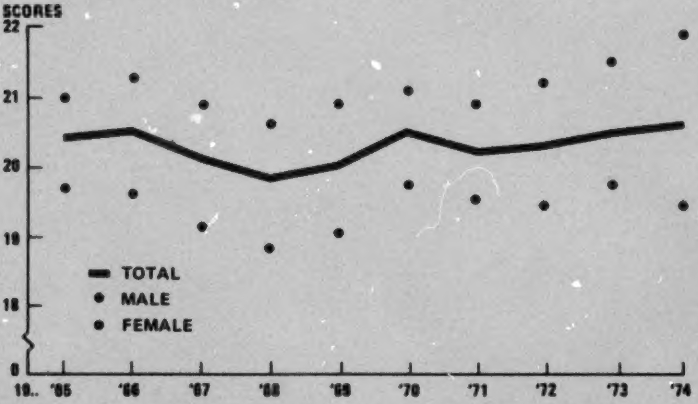
Figure 13



MEAN MATHEMATICS ACT TEST SCORES FOR COLLEGE-BOUND STUDENTS, 1965-1974

Source: Harnischfeger-Wiley: *Achievement Test Score Decline: Do We Need to Worry?*

Figure 14



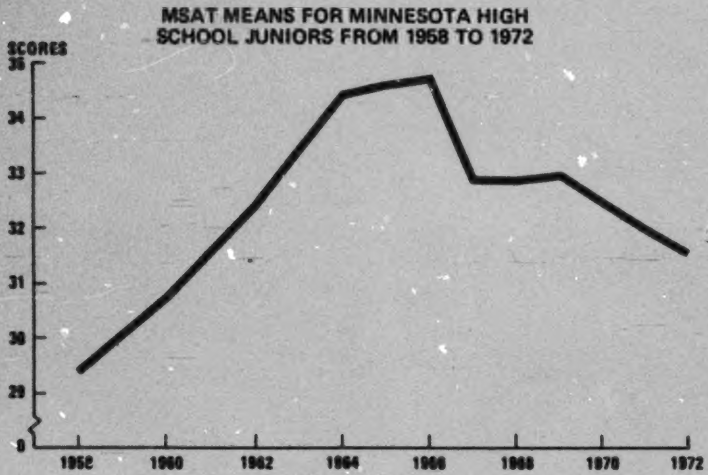
MEAN NATURAL SCIENCE TEST SCORES FOR COLLEGE-BOUND STUDENTS, 1965-1974

Source: Harnischfeger-Wiley: *Achievement Test Score Decline: Do We Need to Worry?*

Along with the SAT, this is of course the great sampler of college-bound students. While using different psychometric techniques, the declines are comparable.

Since 1966, scores on the statewide Minnesota Scholastic Aptitude Test have shown similar declines. And in tests of abilities in the lower grades, there has been a decline in average test scores of all the Iowa Tests of Basic Skills during the period 1965-1974, as well as in the four high school grades as measured by the Iowa Test of Educational Development. The National Assessment of Educational Progress, as I am sure you know, reports junior and senior high school students on the average did not write expository prose as well in 1974 as they did in 1969.

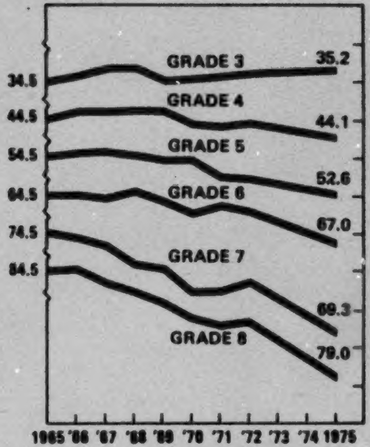
Figure 15



Source: Harnischfeger-Wiley: *Achievement Test Score Decline: Do We Need to Worry?*

Figure 16

TRENDS IN THIRD THROUGH EIGHTH GRADE STUDENT ITBS READING TEST SCORES FROM 1965-1975 (EXPRESSED IN 1965 BASE-YEAR GRADE EQUIVALENTS ON THE IOWA READING SUBTEST)



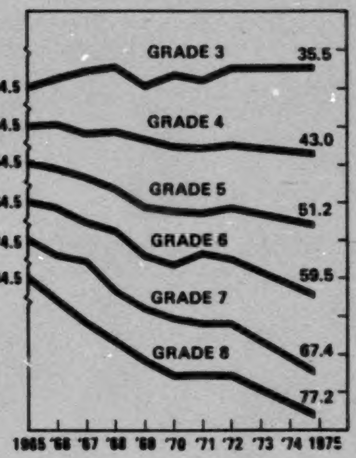
Source: Harnischfeger-Wiley: *Achievement Test Score Decline: Do We Need to Worry?*

Scores in science show a decline from 1969 to 1973. And a survey by NAEP of 17-year-olds and adults between the ages of 26 and 36 showed inability to use fundamental math principles such as beginning fractions or working with percents.

Studies by John C. Flanagan for the American Institutes for Research in Palo Alto, reported by him earlier this year at the AERA meetings, offer additional evidence of the decline, derived from the Project TALENT work. From 1960 to 1970, Flanagun found only slight changes in reading comprehension, study habits, reading habits, and school attendance, but in a sampling of TALENT schools in

Figure 17

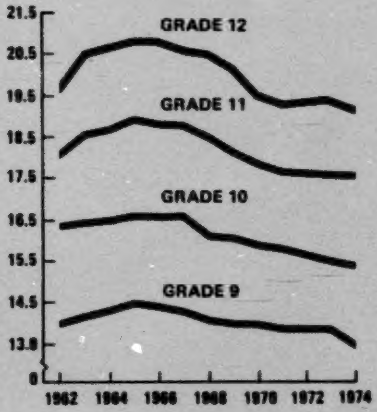
TRENDS IN THIRD THROUGH EIGHTH GRADE STUDENT ITBS MATHEMATICS PROBLEMS TEST SCORES FROM 1965-1975 (EXPRESSED IN 1965 BASED-YEAR GRADE EQUIVALENTS ON THE IOWA M2 MATH SUBTEST)



Source: Harnischfeger-Wiley: *Achievement Test Score Decline: Do We Need to Worry?*

Figure 18

MEAN ITED COMPOSITE SCORES FOR GRADES 9-12 STATE OF IOWA, 1962-74



Source: Harnischfeger-Wiley: *Achievement Test Score Decline: Do We Need to Worry?*

the spring of 1975, he found that between 1960 and 1975 there were significant drops in performance on all the language tests, vocabulary, English, and reading comprehension. He found also substantial declines between 1960 and 1975 in computation and quantitative reasoning, ranging from 17 percentile points for the males on computation to 8 percentile points for both males and females on quantitative reasoning.

Last month (July 1976) the *Wall Street Journal* reported on a new study by the Hudson Institute under the direction of Frank Armbruster, and the headline for this story was "The Great Classroom Debacle." Armbruster found pupil achievement test scores declining all over the country, not just in city schools, but in suburban and rural areas as well. The Hudson study tends to lay the blame for scholastic failures directly on educators, implying that teachers are lazy, and urging broader public involvement (somehow) in the education process. He believes, apparently, that the public—parents—want more of the basics, stricter discipline, more accountability by administrators and teachers, and merit pay. These measures of decline and the knee-jerk words of counsel are not new to us. The decibels of the outcry, however, are louder and more insistent.

Within recent years, the College Board and our colleagues at ETS have, through research and through the input of our many committees of teachers, been following the score decline with great care and interest. It has been the subject of much internal and external discussion since the early 1970's, but only within the past two years or so has it come into the most critical focus as the decline sharpened. It is my intent at this point to explore and share with you, with the aid of some additional illustrative slides, the essence of the decline and some reactions to it.

No discussion is complete, or fair, without some attention to the many conjectures and theories about the situation. As the Washington *Post* has suggested, there are no shortages of speculators and experts. I will not dwell at length on this background, but it does help set the scene; and what I will sketch in here is perhaps episodic and random, but it is also characteristic of the wide-ranging views held. Let me quickly add that at this time we have no satisfactory explanation for this phenomenon.

The four basic factors generally discussed that bear on the decline are: 1) the test itself; 2) the population taking the test; 3) the schools; 4) factors outside the school. The diverse theories, however, do not by any means feel inhibited by these basics.

William Harris, a talented staff member at ETS, for instance, speculates on many other possibilities . . . the family . . . which has become too permissive. Women's lib, which has had an effect on large numbers of women who are full-time workers as well as mothers; the higher divorce rate. Then there is religion and its declining influence for self-discipline—(raised as a reason by a highly respected Harvard sociologist). There has been a growing rejection of traditional Western religions and a search for meaning and relevance in other areas, some occult. Or how about Civil Rights and the changing nature of the college-going cohorts? We see increased encroachment by the courts, forced busing, increasingly tight federal regulations and controls. Or, the "crisis of values" wherein we are in the midst of a revolution of values, a decline (not only in scores) but in the Puritan ethic; the counterculture brings with it a counter force to reason; at the extreme of speculation, criminals and Communists are in control of the pornography industry and are subverting America through their wares. (I am listing a digest of the many explanations offered.)

From another perspective, psychologists Robert Zajonc and Gregory Marcus of the University of Michigan believe that higher birth rates lead to lower achievement scores because the ability of the child is related to adult contact during the early years, and such contact is tied to birth sequence and the number of children in the family. In a recent issue of *Psychology Today,* they point out that SAT's peaked during the early 1960's when many of the students were first-born and second-born children born during the war. The average scores began to drop as their brothers and sisters entered the college market. They will rise again when the lower birth rate reaches the high schools.

Writing in the *Phi Delta Kappan,* Ted Bell, whom you all know, blames declining achievement scores on a general decline in our overall learning environment, which he calls "polluted," and also indicts the increasing use of alcohol and drugs. I might add that Ted along with many others blames TV as another contributing source to the decline. We are studying that one seriously.

Leo Mundy, vice president of ACT, cites some salient points about the decline. He believes that there is clearly a different test population, and secondly that current test-takers are less well prepared in schools.

Fred Hechinger, long time education journalist and observer, attributes some of the problems to the greater sophistication of the "now generation" and suggests a misalignment between today's students, schools, and society, with the recommendation that we seek answer in the relationships between young people and the intellectual environment. There is a sober thread of thought here, but one that does not quickly offer a conceptual framework for research.

Winton Manning of Educational Testing Service points out that the 1968 academic year commenced with riots in Chicago at the Democratic National Convention and that we recently marked the sixth anniversary of the invasion of Cambodia in 1970. He adds succinctly that the years of the largest score decline (1968-72) correspond to the period of greatest upheaval higher education institutions have ever seen, and that this same period also saw a rise in ungraded classes, no-fail grading, rapid inflation of grade point averages in high schools as well as colleges, and the abandonment of general education requirements in college curricula.

This, in general, was the situation facing the College Board nearly a year ago as we prepared to gather in New York for our annual membership meeting of some 2,300 representatives from colleges and schools. We strongly felt it had become necessary as a responsible national organization—a public utility—at the epicenter of this problem to bite the bullet, tell the story and launch constructive actions, with the full involvement of our members. Accordingly, after considerable planning, I announced last October 27 the appointment of a Special Advisory Panel of distinguished educators and citizens, under the chairmanship of Willard Wirtz, former Secretary of Labor, to assess all the various explanations (real and unreal, logical and illogical) that were being offered for the score decline. I further asked this panel to recommend further research efforts which should be undertaken to understand the phenomenon.

As I suggested at that time, the panel was invited by the College Board and ETS to "conduct a detailed and independent study of issues related to the score decline, which, in a real sense go to the very heart of the questions being asked about the quality of American education, and about the nature of our learners in

COLLEGE BOARD AND ETS APPOINT ADVISORY PANEL ON SAT SCORE DECLINE FOR TWO-YEAR STUDY

CHAIRMAN: The Honorable Willard Wirtz
The National Manpower Institute
Washington, D.C.

Panel forms two subcommittees to explore possible causes of decline

SUBCOMMITTEE ON TESTS AND POPULATIONS

SUBCOMMITTEE ON EDUCATION AND SOCIETY

Figure 19

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schools and colleges."

I also pointed out then (and believe now) "that the SAT was not designed to measure school performance and should not be used that way. To single out the schools as being responsible for the decline is, by the nature of the test, unwarranted, unfair, and scientifically unfounded."

The SAT is a measure of developed verbal and mathematical reasoning abilities acquired both inside and outside of school, abilities commonly needed for academic performance in college. The test supplements the school record and other information about the student; it provides admissions officers with a uniform measure of the same mental tasks, expressed on a common scale for all students, irrespective of the widely different educational settings from which they came. The SAT is a common currency in an otherwise unsystematic exchange center—the Admissions Office—and its purpose when all is said and done is equity—fairness.

The predictive validity of the SAT in helping forecast college performance, incidentally, remains as strong and as high today as it has been in past decades, the score decline notwithstanding.

Two very competent scholars of psychometry describe the SAT as follows. First, Philip H. DuBois in *Seventh* (latest) *Mental Measurement Yearbook:*

> "Technically the SAT may be regarded as highly perfected—possibly reaching the pinnacle of the current state of the art of psychometrics. Actually it would be surprising if this were not so. Ever since the SAT was first administered in 1926, highly competent professional staffs have been available at all times to prepare new forms, being guided by objective findings on past administrations and on item analyses of experimental material."

Second, Cameron Fincher, of the University of Georgia, writing in AERA's *Review of Educational Research:* (Fincher deals only with the state of Georgia and the transition of students to its total higher educational system.)

> "The analysis of incremental effectiveness gives firm support to the SAT's usefulness in the selection of applicants to a statewide system of higher education . . . There is good reason to believe that the use of the SAT should not be based on the increased accuracy of predicted grades alone. Predictive efficiency would not appear to be the primary concern of statewide systems, and it may have been unduly stressed at the institutional level. As changing demands are placed upon public institutions, the question of predictive efficiency becomes even less important. The accessibility or availability of higher education has become increasingly dominant, and the effectiveness of the SAT in facilitating the applicant's choice of institutions and program should receive increasing emphasis. The analysis of data over a 13-year period gives firm evidence of the SAT's incremental effectiveness in supplementing the high school record as a predictor of college grades. The gain in predictive efficiency has been appreciable for male and female students entering a diversity of institutions offering a variety of academic programs. The conclusion is drawn that the incremental effectiveness of the SAT is now clearly established and that future developmental efforts need not be directed to the increased accuracy of predicted grades."

Returning to the Special Advisory Panel: The full membership includes distinguished names known to most of you and two members are, of course, present and active at this institute, Barbara Thompson and Ralph Tyler. Others include Ben Bloom from Chicago; President Matina Horner of Radcliffe; Doc Howe of the Ford Foundation; Dr. Robert Thorndike from Teachers College, Columbia; Edythe Gaines, Superintendent in Hartford; and Owen Kiernan, NASSP.

Reviewing a bit more, as the panel held its first meeting last December 14 in New York, it agreed to undertake two concurrent efforts aimed at explaining the score decline, focusing in one subgroup on the SAT itself and on the changing populations of students taking the test. This subcommittee on *tests and populations* is being chaired by Dr. Thorndike and includes six members.

A second subcommittee on education (or the *schools* themselves) and society is chaired by Dr. Horner of Radcliffe and includes ten members.

As the group began their work over the winter of 1975-76 they had before them a veritable mountain of data, statistics, opinions and speculations of the broad nature that I have cited in part earlier. Some of the following slides may help you appreciate the scope of the panel's charge and the difficulty of their task.

Next, let us look again at the graphic presentation of the *decline itself,* which we have seen in the perspective of a 20-year period. You will note that during the years 1957 to 1966 there was relatively little decline, and even some upward movement; in 1966 the slide began.

SUBCOMMITTEE ON TESTS AND POPULATIONS to examine the SAT and the changing populations of students taking the test

ROBERT L. THORNDIKE Professor of Psychology and Education, Teachers College, Columbia University (Chairman)

BENJAMIN S. BLOOM Charles H. Swift Distinguished Service Professor of Education, University of Chicago

BRUCE K. ECKLAND Professor of Sociology, University of North Carolina, Chapel Hill

FRANK W. ERWIN President, Richardson, Bellows, Henry & Co., Inc.

ROSEDITH SITGREAVES Professor of Education and Statistics, School of Education, Stanford University

THOMAS W. F. STROUD Associate Professor, Department of Mathematics & Statistics, Queen's University, Kingston, Ontario, Canada

LEDYARD R. TUCKER Professor of Psychology, Educational Psychology and in the Center for Advanced Study, University of Illinois at Urbana-Champaign

RALPH W. TYLER Director Emeritus, Center for Advanced Study in the Behavioral Sciences, Chicago, Illinois

Figure 20

SUBCOMMITTEE ON EDUCATION AND SOCIETY to catalog factors most likely to affect the score decline and which deserve further study

MATINA S. HORNER President and Dean, Radcliffe College (Chairman)

SANDRA A. CLARK Teacher of English and English Department Head, Sammami [illegible] School, Bellevue, Washington

LUIS C. CORTES Principal, Bowie High School, El Paso, Texas

BRUCE K. ECKLAND Professor of Sociology, University of North Carolina, Chapel Hill

EDYTHE J. GAINES Superintendent of Schools, Hartford Board of Education, Hartford, Connecticut

HAROLD HOWE II Vice President, Education and Research, The Ford Foundation

H. THOMAS JAMES President and Director, The Spencer Foundation

OWEN B. KIERNAN Executive Secretary, National Association of Secondary School Principals

KATHERINE P. LAYTON Teacher of Mathematics and Mathematics Department Chairman, Beverly Hills High School, Beverly Hills, California

WILBUR SCHRAMM Director, The East-West Center, Honolulu, Hawaii

BARBARA THOMPSON Superintendent of Public Instruction, State Department of Instruction, Wisconsin

VIVIAN H. T. TOM Teacher of Social Studies, Lincoln High School, Yonkers, New York

BERNARD C. WATSON Professor of Social Foundations and Chairman, Department of Urban Education, Temple University

WILLARD WIRTZ President, National Manpower Institute

Figure 21

I might at this point interrupt to say that wthin a month we will be releasing the comprehensive ATP data for the 1975-76 year, including information on the score decline this past year. While this is not yet public information, you will as CSSO's be receiving it in each of your states soon, and I can report to you that the decline in SAT V is modest, about 3 points below last year, to 431, which, if not part of the trend would be inconsequential. Scores on SAT M remained unchanged. I think we would agree that this lull, leveling, pause, reversal or whatever, is too limited for any conclusions yet. I might add in passing that the average score for all achievement tests between 1975-76 *rose* from 531 to 538, due primarily to a 17 point rise in the English composition test.

As a concurrent effort, the psychometric qualities of the SAT are under continual scrutiny, as they have been through the 50 years of its existence. Research efforts by Educational Testing Service and the Board to date have led us to believe that there is nothing basically wrong with the test. Nevertheless, at our request, the panel of experts is making its own independent investigation of that assumption and will, in due course, report its findings.

The educational and social issues are, however, more complex, elusive, and difficult to weigh, and these remain under intensive study by the panel. There is no doubt in my mind that the question of the SAT score decline, with all it connotes for the Board, for the schools and colleges, and the individuals involved, remains a serious one that we continue to examine intensely, but not with a sense of panic or hastily developed explanations. Further, it is my judgment that several different forces are converging at this time to affect the decline, not the least of which is affirmative social action, bringing many new young people to college as a product of good public policy. Many of these young people would not have even thought of college if they had been born 10 years earlier.

In the spirit of accountability, it is our full intention to keep you and the public at large advisd by all appropriate means as additional information and clarification become available. You, as Chief State School Officers, receive the confidential report for your state immediately upon completion of the analyses. We do not release these data by state or district to anyone, even though often pressed to do so.

The whole score decline issue has, of course, inevitably heightened for many of us the sensitivity toward, and possibly the need for better and more clearly defined standards which help define and delineate the outcomes of education, particularly secondary education. Standards are much on our minds, and increasingly upon the public mind. Many polls by the Gallup organization and others document the rising feeling that schools and teachers must justify (and measure better) the fruits of their labors, in relation to the investment of public funds.

Standards need not have threatening or negative connotations in education; in many ways we are a nation dependent on standards in all domains of our performance. Standards indeed protect the consumer, and it may be that our consumers are asking us now for such protection.

It has become difficult in many cases today to know exactly what a high school student will, in fact, possess in terms of known academic attributes upon the completion of twelve years of attendance. We all know the problem. Changes are in the wind. New York State, for instance, through its Board of Regents, will require all high school students to pass adult basic literacy exams in reading and in mathematics at grade 9 level, effective with the graduates of 1979. No diploma will be awarded after that date, except upon passage of the examination. (This is standard setting in *the right form*, and by *the right authority*—the state educational governance.)

The American Association of State Colleges and Universities *Bulletin* has recently reported another development in this direction. In California, freshmen and sophomores enrolling at any of the 19 state college and university campuses after September 1977 will be required to take reading and writing proficiency tests after admission, with the possibility that they may have to enroll in remedial courses and be retested before they can graduate.

The proficiency tests and remedial classes measure passed the state university and college trustees by a 14-1 vote, reversing a policy against offering remedial classes. If a faculty survey of student verbal deficiencies is accurate, as many as 60 percent of the incoming students may have to enroll in remedial classes. The examination will be prepared by a statewide task force, undoubtedly made up of college professors who will be *setting standards* for the products of the elementary and secondary schools.

Just two months ago in Denver—under the banner of the Education Commission of the States—and no doubt some of you were there—state representatives met to talk about problems of measuring student skills and explored the possibility of developing a national pool of testing items from which states could develop tests to measure the minimal competencies of their students. Under the general heading of national assessment, discussions focused on what are "minimal competencies" . . . in what? . . . for what purposes? There seemed to be agreement among participants from more than 30 states that a good part of the surge toward competency testing derived from the public interest and concern over score declines and other manifestations of weaker performances in the schools.

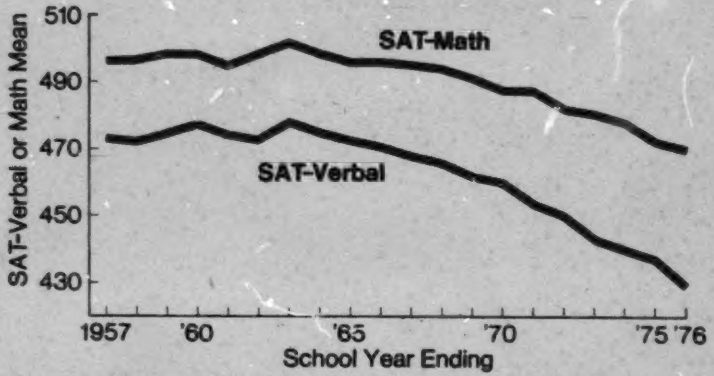
Certainly, the construction and application of standards must be a highly *conscious* act, filled with peril for those who undertake it, whether it be taken by boards of education, college trustees, state or local administrators, or the faculty themselves. And in recent conversations with faculty, for instance—teachers in both high schools and colleges—I have found an increasing unity and deep concern over the need for someone, some institution, some body of people to restore the centrality of something called "standards." There is especial interest in redressing elective trends and coming to grips with the tough question of what the completion of the high school years should mean; what the appropriate curricular articulation should be between school and college; and what college degree means.

In an informal paper that I wrote some weeks ago to Byron Hansford and his staff, I discussed the issues of a clear (and in my judgment a dubious) trend toward legislating the assessment of educational outcomes, and suggested that if standard-setting has truly become a national concern, transcending state boundaries, then this group, the Chief State School Officers, seems most fitted to the task of systematizing the process of measuring school outcomes. Perhaps there is no one in the United States, beyond the Chiefs themselves, who appreciates the extraordinary and ominous implications of this notion more than I do. My written proposal was not to advocate the concept, for I myself am ambivalent on it. Nor do I necessarily see the College Board a proper companion for the venture. Yet the other alternatives are equally if not more ominous. I concluded my commentary in the paper by suggesting that "the blunt instrument of law, whether state or federal, is a doubtful mechanism for such a sensitive task," and urged the Chiefs to put their thoughts to the issue.

It does seem clear in conclusion that the score decline and many other related indicators do compel us to take some unified and cohesive actions in the genuine spirit of voluntary cooperation, taking account of our diverse educational system, and, in effect, be initiators rather than reactors.

The score decline, I hope I have made clear, is only one of many respectable measures that are telling us a sober story. It is a story, at this point, that asks many more questions than it answers. In the spirit of accountability, the College Board stands ready to work with the Chiefs, and, as is appropriate, to invest our resources of both money and manpower to seek bold answers to these disturbing questions.

SAT-Verbal and Math
Means for the Period 1957-1976*



*These means represent all scores reported. Thus, persons having more than one score are counted more than once.

Figure 7
(repeat)

Key to Illustrations for CSSO paper of August 3, 1976

Figure

1. SAT takers as percent of 18-year-old population
2,3. High School retention rates
4. HS graduates going on to college
5. Adult learners (ages 25-64 projections)
6. AP growth
7. SAT V and M 1957-1976 (declines) (Note: used twice, here and as final illustration)
8. SAT volume 1925-75
9. SAT scores below 300
10. SAT scores over 600
11. ACT English
12. ACT Math
13. ACT Social Science
14. ACT National Science
15. Minnesota SAT
16. ITBS grades 3-8, reading
17. ITBS grades 3-8, math
18. ITED, grades 9-12
19. Score decline panel photo, SPM, Wirtz
20. Panel subcommittee roster—tests
21. Panel subcommittee roster—education and society

Chapter VIII

AFFECTIVE-HUMANISTIC LEARNING

Arthur W. Coombs
Greeley, Colorado

Every list of objectives for public school education from the very beginnings 150 years ago right down to the last White House Conference has always included such humanistic objectives as good citizenship, self-esteem, worthy home membership, democratic values, caring, brotherhood, pulling one's own weight, lack of prejudice, creativity, responsibility, intelligent behavior, a healthy mind in a healthy body, and many more. Such objectives have always been a part of what we seek from our public schools. For the most part, however, they have been treated as general objectives of education and generally ignored while schools have concentrated on more specific objectives like reading, writing and arithmetic. Throughout educational history humanistic objectives have mostly been treated as "nice ideas" but not really essential. But times have changed and this attitude can no longer be tolerated. Humanistic objectives in the world we live in have become absolute necessities if schools are truly to achieve their objectives.

We have created a society more complex and interdependent than ever before in history. Each of us is almost totally dependent upon other people even for the simplest necessities of life. In such an interdependent society we are totally dependent upon the efforts of good will of millions of people we have never seen or heard of. Concurrent with this interdependence, we have vastly increased the power of the individual for good or evil. Guns can be bought in almost any hardware store, and a Lee Harvey Oswald can throw us all into chaos with a single shot. In addition, the greatest problems we face in our time—problems of ecology, pollution, starvation, overpopulation, even atomic bombs—are essentially problems of people. The world we live in must have responsible people of good will who can be counted on to behave intelligently, autonomously and with a sense of caring about their fellows. To deal with such problems a new conception of the nature of learning is required.

Most of us grew up with a conception of learning as a problem of teaching, telling and conditioning. Modern humanistic psychology sees the problem of effective learning not as a mechanical function, but as a personal, affective one. The basic principle is this: *Any information will affect a person's behavior only in the degree to which he has discovered the personal meaning of that information for him*. Learning always has two aspects: 1. The acquisition of some new information or experience, and 2. the personal discovery of that information for the learner. In education generally we are experts at the first half of that equation, while most of our failures arise from inability to help students discover the personal meaning of events for them.

Effective learning *must be* humanistic and affective. Emotion or "affect," psychologically, is essentially an indicator of the degree of personal relevance of an event. The closer an event is perceived to the self, the greater is the degree of emotion experienced. I don't feel much emotion about your children. I feel a great deal about my own. If emotion is an indicator of the degree of personal meaning, it is also an indicator of the effectiveness of learning. If learning is not "affective," there is probably none at all! Unfortunately, the term "affective education" is frightening to many parents and the public, who feel somehow it is an indication that schools are getting into matters that are none of the school's business. If educators can learn to talk about making education more relevant, however, no one is likely to object to that! Similarly, helping children to see themselves in more positive ways is not likely to be disturbing to parents. And almost everyone will agree that discussion is an essential part of the educational process (so long as it is not called "values").

Humanistic objectives for education have to do with such things as intelligent behavior, creativity, adaptability, responsibility, values, and especially the student's self-concept. They are also concerned with the student's personal meanings and with feelings, attitudes, beliefs, likes, dislikes, hopes, those internal conditions which really make us human. These are not frills. Whether education learns to deal with these matters will in fact determine the success or failure of schools. I am not a humanist because I want to go around being nice to people. I am a humanist because I *know* that humanistic factors will determine the effectiveness of *any* learning—reading, mathematics, chemistry, art, music, science, whatever! Humanistic qualities are significant factors that affect the learning process. They cannot be ignored except at the risk of making learning less productive. To ignore the laws of learning is like saying, "I know my car needs a carburetor, but I am going to drive mine without one!"

Failing to deal with humanistic objectives of education means we fail modern students. The most important problems today's young people face are such questions as Who am I? Do I matter? How shall I live? What shall I believe? How can I be authentic? To disregard such youth problems is to run the risk of making schools irrelevant, because deeply personal problems cannot be ignored or set aside for very long. An efficient educational system must begin with helping students solve the problems which are real to them in the present. After that they can attend to problems of the future. Donald Snygg once said, "The major problem of schools in our time is that we are all of us busy providing kids with answers to problems they don't have yet."

Despite the importance of humanistic objectives, education everywhere is currently on a kick for "accountability" and "behavioral objectives." Educators are attempting to apply the industrial model and systems approaches of management to the educational process. This is being done in the illusion that it is bound to create greater efficiency. The difficulty with such behavioral objectives and industrial procedures is not that they are wrong. They are partly right. Behavioral objectives approaches *do work* in the classroom for the simplest, most primitive aspects of education like the acquisition of basic skills. They *do not work* effectively for broader, holistic, humanistic objectives. Systems techniques are neither right nor wrong in themselves. A system is only a way of making certain one achieves his objectives. Applied to the wrong objectives, systems approaches will only guarantee that one's errors are colossal!

The industrial model simply does not fit the broadest objectives of education. The organizational model of industry is designed for the production of a product. The worker is part of the machinery for the production of that product. In education the worker *is* the product—the goal of schools is the welfare of the student. If industry were organized for the welfare of the worker instead of production of a product, it would not be organized the way it is! Blind application of the industrial model has the effect of dehumanizing the educational process. Historically, application of systems models in industry had the effect of dehumanizing the worker. The workers responded by forming unions to beat the system. We should have learned from that, but a similar revolt is precisely what seems to be happening in many aspects of education these days.

Whenever new conceptions or techniques are introduced in an institution, it is always necessary to be aware of the side effects which accompany such changes. Failure to do so may unconsciously defeat the innovator's purpose. At least four major questions with respect to these side effects must always be asked: 1. Is this innovation directed toward the most important objectives? 2. Is this innovation the best way to deal with those objectives? 3. What is the effect of this innovation on the teachers' goals, thinking, procedures and morale? and 4. What is the effect of the innovation on student attitudes, goals and the direction of energies?

Once it was enough to teach simple skills, but no more; an educational system which meets the needs of our time must deal with humanistic objectives. What can we do?

One. It is a psychological principle that people only do what seems to them to be important. Educators at every level, therefore, must recognize the importance of humanistic objectives and make a commitment to them.

Two. If humanistic objectives are truly to be advanced in the public schools, we need to find those people who are achieving humanistic objectives effectively, call attention to them and make it worthwhile for others to move in the same directions.

Three. Modern schools and practices contain an extraordinary number of dehumanizing influences at every level of operation. Every effort should be made to bring these roadblocks to light and to eliminate them from school practice wherever possible.

Four. A major need is for more adequate definitions of humanistic objectives and for adequate ways of assessing them. Since teachers usually establish objectives on the basis of what they know how to assess, it is essential that a major effort be mounted for the definition and assessment of humanistic objectives.

Five. We are currently spending hundreds of millions of dollars on problems relating to behavioral objectives. By contrast, we allocate practically nothing to humanistic ones. This imbalance needs redress. Since humanistic objectives have been so universally ignored in most of our thinking for the past ten years, we have a lot of catching up to do. Allocating a major portion of available funds for the next ten years to this project would still not make up our neglect, and the outcomes might be far more profitable.

Six. If humanistic objectives are as important as we have suggested, a vast effort is required to update school policies, procedures and practices through in-service education and staff development accompanied by an equally important thrust toward improving public information and awareness of these matters.

Chapter IX

LEARNING PROGRAMS FOR THE LINGUISTICALLY AND CULTURALLY DIFFERENT

California Department of Education Team

Wilson Riles, Superintendent of Public Instruction
Ramiro Reyes, Assistant Superintendent of Public
Instruction and Director, Office of Support
Services and Bilingual Education
Carlos Gonzales, Acting Manager, Bilingual and
Bicultural Education Section
William Whiteneck, Associate Superintendent

Editorial note: The California Department presentation included both prepared presentations and the display of transparencies accompanied by extemporaneous narration. The following chapter is a composite summary of the remarks and the content of the visual presentation.

The Constitution of the State of California states that a general diffusion of knowledge and intelligence is essential to the preservation of the rights and liberties of the people, and directs the Legislature to encourage by all suitable means the promotion of intellectual, scientific, moral and agricultural improvement.

Furthermore, the California Education Code Section 7504 affirms that "It is the policy of the people of the State of California to provide an educational opportunity to every individual . . ." Hence, the State Department of Education, under the leadership of Dr. Wilson Riles, has vigorously pursued the goal of encouraging and helping public schools in California to provide the kinds of programs which meet the diverse educational needs of all students in the state. But since the needs of Black, Chicano, Asian, Native American, and especially limited and non-English-proficient students have long been ignored, several major efforts have been initiated and carried out by the State Department of Education to equalize educational opportunities and to provide specialized programs for these students.

As an example of the educational plight of such students, I would like to share with you a few of the findings from the various reports by the United States

Commission on Civil Rights on the education of Mexican-American children in the Southwestern states. Here are some of the findings:

1. As of May 1975, 4.5 million Spanish speakers under 20 years of age speak Spanish at home, and "an estimated 259,830 Asian children speak little or no English."
2. The current system of financing public schools makes it very difficult if not impossible for districts with a large proportion of minority and non-English-speaking children to have the resources to provide quality education.
3. Mexican-American, Black and Indian students exhibited significantly lower scholastic achievement levels than Anglo students on every achievement criterion measured.
4. Most public schools have excluded the culture and language of Mexican-American students from the mainstream of their curriculum and have used proportionately few Mexican-Americans as school personnel or as community advisory committee members.
5. Mexican-American children received less attention from their teachers, repeated grades more often and constituted a higher proportion of the students in low ability and EMR classes than did Anglo children.

According to the 1975 State Language Dominance Survey, about 233,520 students in K - 12th grades were reported to be limited and non-English-speakers in California.

Section 5761.2 of the California Education Code defines bilingual education as ". . . the use of two languages, one of which is English, as a means of instruction in any subject or course. It is a means of instruction in which concepts and information are introduced in the dominant language of the student and reinforced in the second language." Therefore, bilingual-bicultural programs aim at helping children to function in two languages and two cultures.

Research studies tend to support bilingual education as a viable approach to meeting the needs of limited and non-English-speakers. Ervin[1] in her study of Italian bilinguals found that when the subject's dominant language was used in learning and recalling, it produced the best results. Modiano[2] concluded from her study of three tribal areas in Mexico that persons from linguistic minorities acquire greater facility in reading comprehension in the dominant language if they first become proficient in their tribal language. Del Buono, from our Department of Education, contrasted the achievement of Mexican-American students who were taught monolingually with a similar sample taught bilingually and found that students in the bilingual-bicultural program had demonstrated higher achievement and self-concept.

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1. Ervin, Susan M. "Learning and Recalling in Bilingual," *American Journal of Psychology*, 1961, 74, 446-451.
2. Modiano, Nancy. "Reading Comprehension in the National Language," an unpublished Ph.D. dissertation, New York University, 1966.

The Bilingual Education Act of 1968 (ESEA Title VII) has been a positive step on the national level to provide greater resources for public schools to design bilingual programs. Federal funds totaling $374.9 million were appropriated for this program from 1968 through 1976. To illustrate the expansion of bilingual projects funded by Title VII, $7.5 million were appropriated for 79 federally funded projects in 1969 serving 26,500 children. In 1975, $85 million were allocated to 381 projects serving 268,500 children and representing over 42 languages. In addition, there were federal grants to 30 universities for fellowships for study in the field of bilingual education. The amount appropriated for 1976 grew to $97,770,000.

It would be helpful now to show you the evolution of bilingual education in this country.

Pre-1960: English language "immersion"

1960-1965: English as a second language (ESL)

1965-1970: ESL and bilingual instruction

1970-1974: Bilingual-bicultural programs

The following represents a range of program options using bilingual instruction regardless of funding sources.

A. *Transitional Bilingual Instruction*—The student's primary language is used as a "bridge" to learn English. The school makes provision for instruction in a language understandable to each limited-English-speaking student until such student can adequately understand instruction in English. Such instruction includes listening and speaking skills developed in both languages. Reading and math readiness and introductory skills are developed in the language the student understands best.

B. *Partial Bilingual Instruction*—Listening, speaking, reading, and writing skills are developed in both languages. Instruction related to culture and history are taught in the language the student understands best.

C. *Full Bilingual Instruction*—Basic language skills are developed and maintained in both languages. Instruction in required subject matter or classes is provided in both languages in addition to culture and history.

D. *Bilingual-Bicultural Education*—This is a system of instruction which uses two languages, one of which is English, as a means of instruction. It is a means of instruction which builds upon and expands the existing language skills of each participating student, which will enable the student to achieve competency in his or her primary language and in English.

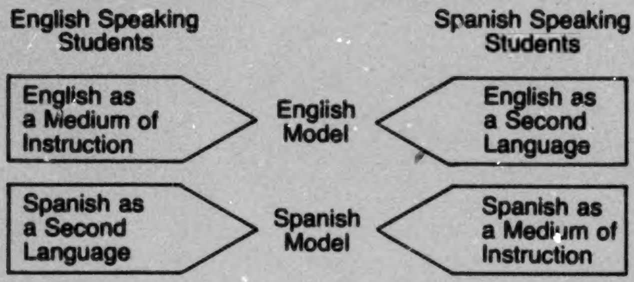
The most widely used instructional approaches in bilingual classrooms are:

1. Translation: lesson is presented in English then translated to a second language.
2. Preview-Review: preview is done in one language, followed by a lesson in the other language ending with a review in both languages or the language used in the preview.
3. Concurrent: lesson is presented in both languages.
4. Back-to-Back: instruction in one language during a portion of the time and in the other during another part of the school day.

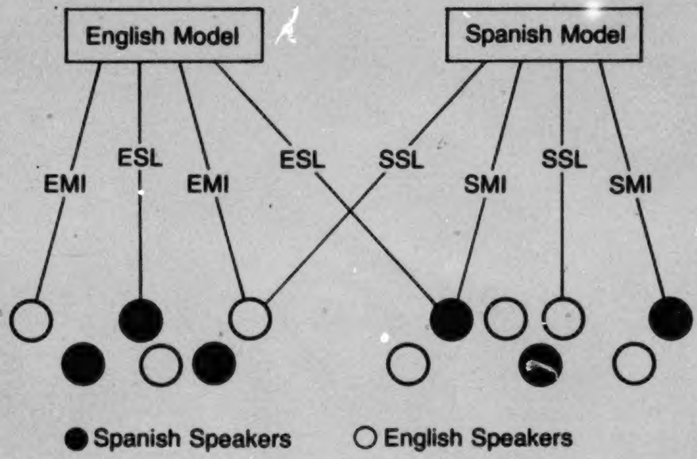
5. Immersion in the native language: instruction is done in the native language supplemented by instruction in English as a second language.
6. Eclectic: the use of a variety of techniques and combinations of methods.

The following charts display graphically some of the techniques used:

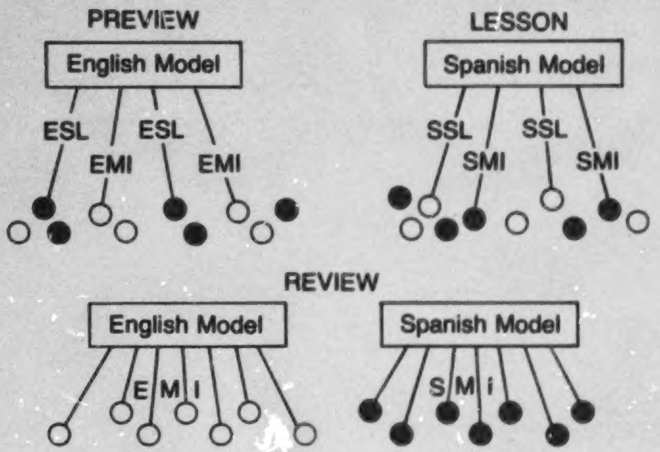
DUAL MODEL RESPONSIBILITIES


English Speaking Students
Spanish Speaking Students
English as a Medium of Instruction
English Model
English as a Second Language
Spanish as a Second Language
Spanish Model
Spanish as a Medium of Instruction

TEAM TEACHING TECHNIQUE


English Model
Spanish Model
EMI
ESL
EMI
ESL
SSL
SMI
SSL
SMI
● Spanish Speakers
○ English Speakers

PREVIEW/REVIEW TECHNIQUE



To accommodate the intent of the Board Policy, an Ad Hoc Committee on Bilingual Education was formed. Participating with SDE personnel were project directors, representatives from IHE's and officials of the U.S. Office of Education. The committee received the charge to determine the major issues in addressing the educational needs of the LES/NES learner in California, and generate a list of decisions directional in nature. Existing state or federel statutes and funding sources were not to be considered as limiting factors.

Now that I have described the legislative and financial frameworks for bilingual education, let me share some of the problems and possibilities which exist in this area. Among the major problems are the following:

1. *There is no single agreed upon definition of bilingual education.* According to the Bilingual Education Act of 1974, bilingual education is: "Instruction given in, and study of, English, and to the extent necessary to allow a child to progress effectively through the educational system, the native language of the children of limited English speaking ability, and such instruction is given with appreciation for the cultural heritage of such children, and with respect to elementary school instruction; such instruction shall to the extent necessary, be in all courses or subjects of study which allow a child to progress effectively throughout the educational system."

The U.S. Comission on Civil Rights in their report on bilingual-bicultural education (May 1975, page 3) provides another definition:

> "Bilingual bicultural education is instruction using the native language and culture as a basis for learning subjects until second language skills have been developed sufficiently."
>
> AB 2284 defines Bilingual Education as:
>
> "The use of two languages, one of which is English, as a means of instruction in any subject or course. It is a means of instruction in which concepts and

information are introduced in the dominant language of the student and reinforced in the second language. It recognizes that teaching of language skills is most meaningful and effective when presented in the context of an appreciation of cultural differences and similarities."

It is obvious that these definitions lend themselves to a broad spectrum of interpretations. The state will take the steps necessary to cooperate with other agencies such as the U.S. Office of Education, to ensure that an agreed upon definition of bilingual education evolves.

2. *The target population has not been fully identified or served.* The need is evident for valid, reliable language assessment instruments in order to determine not only language dominance, but the quality of skills in the student's linguistic repertoire including listening, speaking, reading and writing in one or more languages. The SDE has taken steps to develop instruments in cooperation with experts in the field. Professional organizations such as the California Association of Bilingual Educators have engaged in the review and critque of instruments in cooperation with SDE representatives, IHE's and Research and Development labs. Results are forwarded to the state for consideration. If all students who could benefit from bilingual instruction are identified, the state will require assurance that they are provided with instruction appropriate to their needs and delivered by qualified personnel.
3. *There is a shortage of well-prepared personnel in bilingual education.* What is the impact of staffing patterns on the ability of the LES/NES student, to classrooms where there are a bilingual-bicultural teacher and a bilingual-bicultural aide? The California Bilingual Act funds only bilingual aides and requires that the teachers in the AB 2284 classroom be bilingual. The Bilingual Bicultural Education Section also administers AB 2817, under which aides teaching in bilingual classrooms can advance to candidacy for teaching certificates in eight (8) four-year institutions and fifteen (15) two-year colleges. Progress is being made toward the identification of criteria upon which can be based an assessment of a staff member's bilingualism. Efforts must be made to ensure that the target population is served by counselors, administrators, resource personnel and support staff who are sensitive to their needs. To serve this end, qualified consultants must be identified, and workshops conducted in cooperation with IHE's to provide participants the opportunity for professional advancement.
4. *There is a scarcity of adequate instructional materials in languages other than English and a need to scrutinize such material for classroom use.* California is determined that the LES/NES student receive an education at least equivalent to that of English-speaking peers. A critical review of bilingual materials is necessary in order to ensure that a scope and sequence of learning skills is available in materials which also reflect the culture of the linguistic group, as well as accommodate the unique learning styles of the group and individuals within it. Considerable progress has been effected to this end, as evidenced by California's text adoption process, and by the close scrutiny of objectives and procedures outlined in proposals for funds under the Consolidated Process.

Experts in bilingual-bicultural education are presently cooperating with Elementary and Secondary Field Services in the process, as they will in the onsite monitor and review process of funded proposals.

5. *Instructional modes have not been clearly elaborated.* Discrete elements of instructional modes, some of which you have seen today, must be identified in order that successful models can be identified and replicated. Review instruments and texts must be identified or developed to isolate variables and assess the effectiveness of on-going programs.
6. *There is inadequate research in the field.* If teaching bilingually is to be accepted by educators, parents and boards of education, the philosophy must be substantiated with data generated by good research designs. Longitudinal studies must be initiated under strict controls in order to determine long-range results and identify progress rates. California encourages graduate students and IHE staffs to initiate research projects related to all aspects of bilingual-bicultural education, and plans to develop a method by which these can be compiled and the information disseminated.
7. *Poor evaluation designs.* Replicable model programs will not be identified until evaluations are designed which are addressed to the quantitative and qualitative contributions of discrete programmatic elements. The Office of Program Evaluation and Research is conducting a critical review of bilingual data, and is cooperating with experts in the field to identify improved techniques and instruments.
8. *Greater fiscal accountability.* The SDE, through the Consolidated Application Resources Management Unit, is progressing toward a system whereby districts are able to maintain a clear audit trail and demonstrate the impact of funds from various sources on the academic proficiency of students. As more categorical funds become available, the state will continue to hold districts accountable.
9. *Technical assistance is urgently needed by most districts.* As more non-and-limited-English speaking students are identified, districts have expressed a greater need for assistance in establishing programs to meet the unique needs of these students. The SDE has a limited number of consultants demonstrating specialized skills in bilingual-bicultural education, and these skills must be shared at regional and intradepartmental workshops. Proliferation of skills will benefit all students in the state. Program improvement will be reflected during monitor and review process and in data generated by the California Assessment Project.

California state legislation, designed to meet the needs of students who function better in a language other than English, was first introduced in 1967. Subsequently, forty-four bills were passed relating in part at least to the education of this student population. Influence was impacted across the areas of:

Preschool/Child Development
K-12 Education
Adult Education
Employment and Inservice Training
Credential Programs

Instructional Materials, Testing and Research, Unemployment and Housing Related Categorical Funding (SB 90, AB 1267, SB 1864)

The major state program emphasizing the delivery of bilingual services to meet the needs of non-and-limited-English speaking students has been provided through the Bilingual Education Act established by Chapter 1258, Statutes of 1972 (AB 2284), serving nine linguistic groups and encompassing 25,000 students at 453 school sites in 118 programs.

This bill, AB 2284, is intended to provide supplemental financial assistance to help school districts which choose to participate to meet most of the special costs of phasing-in bilingual education programs. This legislation makes $8.5 million available to school districts in California. The legislation is permissive and competitive. All responsibility for organization, administration and coordination of this program rests with the Bilingual Bicultural Education Section, Office of Program Planning, Federal Administration and Bilingual Bicultural Education, State Department of Education.

The California State Board of Education, anticipating the implications of the *Lau vs. Nichol's* Supreme Court Decision, and as an expression of their concern for each California student's access to an equal educational opportunity, adopted a policy effective December 12, 1975, supporting the Lau Decision and identifying the conditions and minimal standards under which educational services are to be provided for students who function better in a language other than English. Concern is directed to students at all levels including adults, and those in vocational programs as well as the preschool through grade 12 population.

To provide bilingual-bicultural education to all of the children who need this kind of instruction is one of the great challenges facing our Department of Education. How should this type of education be funded? How do we determine the grantees? How should the delivery system be organized? And how can we bring about as wide an involvement as possible in formulating policies for bilingual education.

The ability of the California State Department of Education to assume this challenge can best be illustrated by the manner in which the funding is systematized through the Consolidated Application and Evaluation Process.

In 1973 the Department initiated a consolidated approach for federal and state categorical programs to reduce the administrative burden on school district staffs. The consolidated application process requires school districts to coordinate the use of funds from the following special sources:

- Early Childhood Education Program
- Elementary and Secondary Education Act, Title I
- Elementary and Secondary Education Act, Title II, (IV-B), Phase I
- Miller-Unruh Basic Reading Act
- Educationally Disadvantaged Youth Program (SB 90)
- American Indian Early Childhood Education
- State Preschool Program
- State Bilingual Education

The consolidated application process is composed of three steps:

1. The process is initiated by the district's consolidated application for special program funds on Form A-127D. The Department processes the application for action by the State Board of Education.
2. Each school receiving funds then develops the comprehensive school plan (Form A-127ES) which details the allocation of resources and outlines provisions for personalized instruction for all children, plus extra services for the neediest. The Department reviews these plans for compliance and quality.
3. A third document, the consolidated evaluation report (Form E-127P), assesses how well the school met the objectives of its plan, accounts to the federal and state agencies on use of funds received, and provides information for statewide evaluation of categorically funded programs.

Throughout the process the Department's elementary and secondary (where applicable) education staff provides planning assistance, onsite reviews, school plan review ratings, and program improvement assistance to the 2,800 schools and 850 districts participating. The staff also reviews all school plans submitted and programs visited to ensure adherence to state and federal regulations.

In addition to the funds in the consolidated process the amount of ESEA Title VII funds expended in California has increased each year since 1969 to total 22 million dollars during FY 1975-76, 14.5 million of which went to LEA's, and the remainder for Resource and Training Centers Institutional Assistance and Fellowships. Each year the Department, in compliance with the Federal Regulations, has conducted a preliminary review of Title VII proposals and to a limited extent provided technical assistance for LEA's. You are aware that funds have been appropriated under the ESEA Title VII Bilingual Education Act for State Departments of Education to coordinate technical assistance to programs funded under the Act. The California proposal was presented for preliminary negotiations in June, and has been modified for final submission in August. Funds will be used to secure experts in bilingual-bicultural education whose task will be to monitor programs as implemented, facilitate the process of evaluation, and in close cooperation with USOE Region IX's California Coordinating Association for Bilingual Education Support Services, to accumulate and disseminate information critical to the improvement of services to all non-and-limited-English proficient students in the state.

Now that I have told you about the problems we have encountered and our effort to meet them, I would like to conclude by reiterating the Department of Education's commitment to bilingual-bicultural education. We hope to coordinate our efforts within the Department with those of other state and federal agencies to insure as much as possible that all non-and-limited-English speaking children receive the quality of education they deserve.

Chapter X

DEFINING WHAT WE WANT FROM LEARNING: COMPETENCY OR EXCELLENCE?

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When I saw the list of luminaries that you are having as speakers at this institute—names like Ralph Tyler, John Goodlad, Sid Marland, and all the rest—I wondered what in the world caused you to invite me. I could only conclude that it was Ken Hansen's way of giving you a break—after so much intense mental stimulation provided by several of the giants of American education, Ken probably figured that you would appreciate some exposure to a non-giant. As Washington Irving once wrote, "There is a certain relief in change, even though it be from bad to worse; as I have found in traveling in a stage coach, it is often a comfort to shift one's position and be bruised in a new place." So, at least, your bruises these next few minutes will be in a new place.

Another reason for my apparent modesty in approaching this task—modesty being a characteristic for which Texans have not conspicuously distinguished themselves—is the fact that the Institute deals with learning, of all things. When Ken first phoned me and asked if I could participate in an institute on learning, I confessed that I didn't know much about learning. He replied that the problem of ignorance had never kept me from speaking before, and he saw no reason why it should now. With this comforting reassurance, I accepted the invitation, with both gratitude and trepidation. Benjamin Franklin once spoke of a pedant who was so learned that he could name a horse in nine languages, but so ignorant that he bought a cow to ride on. I have the opposite problem—I know what a cow is for, just as I have had a lot of practical experience in the teaching-learning business, but I doubt that I can talk about it with anything like erudition.

I assure you that I have no intention of telling you how to do your job. I plan to stick rather closely to my own limited areas of expertise, to make some comments that I hope will stir the imagination a bit, to listen with interest to your reactions, and then to disappear, leaving you with the problem of doing something about it all. The title of my remarks, as listed in the program, is, "Defining What We Want from Learning: Competency or Excellence?" As you can see, that gives me considerable latitude in determining the content of my address. I want to make one thing clear at the outset, however—given a choice between excellence and *anything*, I come out emphatically on the side of excellence! Since my field is educational administration and supervision, I shall approach my subject from that point of view. Further, I shall roam largely in two domains, both of which have been interests of mine for many years: (1) the *people* whom we recruit, select, and train to occupy positions in the public schools, especially the leadership positions, and (2) the *training* that we give these people in our preparation programs.

The People

I take the position that the greatest single school-related influence on the amount and quality of the learning that students achieve is the people employed by the schools. Because of this, those of us in the colleges and universities must make a determined commitment to quality in our recruitment and selection processes. We must make the painful decision to be considerably more selective than has been our custom in the past, because we can't make diamonds out of cobblestones, regardless of how assiduously we polish them. Fundamental change in human beings is too difficult to bring about for us to operate on the fond hope that we can accept mediocrity at the time of student admission but insist on excellence at the time of graduation. One of the few bright spots in the current oversupply picture in many fields of education is the opportunity it gives us to be more selective.

I want to make a special case for increased selectivity in my own field of educational administration. Although we have been fortunate in attracting into our field many people who would undoubtedly compare favorably with the best in any other field, the average student of educational administration is so far below the average student in most other fields, in mental ability and in general academic performance, that the situation is little short of being a national scandal. The simple fact is that we are not recruiting our share of the blue-ribbon talent, and we are not hardnosed enough in rejecting the obviously unpromising "good old boys."

One necessary step in correcting this state of affairs is to accredit, for school administrator preparation purposes, only as many of the strongest institutions as are required to meet the demand. In those areas where several impoverished institutions compete for the dubious privilege of offering a poor program, it is the quintessence of fatuity to expect high admission standards to prevail. The presence of such unneeded institutions in the preparation field is a depressive factor on the profession as a whole. Until all institutions are willing to set reasonably high admission standards, especially in such relevant considerations as mental ability and scholarship, then even the best institutions will have difficulty in overcoming the image of mediocrity that burdens educational administration. Here, of course, is an area in which we in the universities and you in the state departments of education can most productively work together.

I'll come back to the problems associated with measurement of the qualities we value in educational administration in a few minutes. First, I'll present some views on those qualities as I perceive them. I'll be concerned with only four categories: intellectual, interpersonal, moral, and one I'll call emotional-physical. I shall not deal with the impact of situational influences on the administrator's behavior or on organizational processes or productivity. My avoidance of these influences should not be interpreted as a denial of their existence or their importance. I am simply delimiting my problem to the characteristics of the *man* whom we select into our preparation programs, assuming that we know nothing about the situations in which he will eventually be placed.

One more comment about my use of terms is in order before I proceed with the burden of my message. Henceforth, to spare you the tedium of my references to both the male and female possibilities every time I speak of a school administrator, I shall use the masculine gender. So, when I refer to the *man* in administration, I am speaking of mankind generically, not sexually. As Wendell Willkie put it, "Mankind embraces womankind." I must say that I have seen no evidence to support the anti-woman bias that has prevailed in many school administrator selection circles; in fact, women in elementary school principalships (the only administrative position they have been able to attain in significant numbers) seem to do at least as well as men, and perhaps better. This should raise a serious question about the implications of the fact that the proportion of women in supervising principalships of elementary schools in this nation decreased from 55 percent in 1928 to approximately 20 percent today. We are also told that women enter elementary school principalships later in life and are on the average about ten years older than their male counterparts. And the average female elementary school principal is four years older than her predecessors were about 16 years ago (56 compared with 52)—which surprises me, because women of that age group have been looking younger to me.

Discrimination against women, which has almost amounted to institutionalized misogyny, runs deep in our culture, and is not likely to go away very soon, although I like to think that the picture is beginning to change—with an assist from Title IX. Certainly the composition of our student body in educational administration is noticeably different from what it was just four or five years ago. A woman used to be a rarity in our classes; now the proportion is about half and half.

In the hope that I have endeared myself to the ladies who might hear or read this, I shall move on. The rather elusive point on which I started all of this is that I am using the term *man* to mean man or woman, even though I still recognize the difference. I now return to the four qualities that I think are important attributes of school administrators, and I shall speak specifically of school principals most of the time.

Intellectual. My ruminations on the principalship in some of our more trouble-laden areas, together with my discussions with principals during the past few years, almost lead me into a cul-de-sac that finds me concluding that anyone who would aspire to a principalship these days couldn't be bright enough to handle the job. I retreat from that thought immediately, however, when I consider the large number of relatively pleasant or at least manageable situations that exist and will probably continue to exist, particularly at the elementary school level.

Assuming that intelligence will not be self-defeating, then, I am convinced that at least a moderately powerful intellect is one of the most essential characterstics of principals and will increase in importance in the future. Call it what we will, and measure it how we will, mental ability has stood up remarkably well as a concomitant of success in school administration, even though our success criteria have been shaky at best and our tests of mental ability less than perfect. Tests of general intelligence or academic aptitude have also been found to be useful, when used with other measures, in predicting graduate-level grade-point averages in Education. And outside the field of Education, tests of cognitive ability are consistently reported to be of value as predictors of both academic performance and effectiveness on the job, although success criteria in other fields are as slippery as they are in ours. The correlations are low, to be sure, usually on the order of .30 to .40 between such tests and the various criteria, but they almost always contribute significantly to accuracy of prediction. Taking into account the fact that we are dealing with an extremely difficult task, fraught with measurement and criterion problems, we can hardly ignore one of the few types of data that are consistently even a little bit helpful.

What I have said about intelligence so far could have been (and usually was, by me and others) for the past several years. I would contend that in the future it will be an even more critical qualification of school principals, because of the new expectations and pressures bearing down upon the job. What kind of mental ability and breadth of knowledge will it take to comprehend the mission of the schools in the 1980s and to grasp the implications of individual and societal need with regard to school program, organization, personnel, and facilities? What kind of intellect will it take to communicate effectively with the specialists who will be staffing our schools? How dull can a principal be and still sense the possibilities present in the application of technology to his planning, facilitating, coordinating, and evaluating roles? I insist that there is simply no place left in school administration for the mediocrity whose sole qualification is that he is available. The reason for my shrillness at this point is that our record in the past has been something less than glorious, with regard to the average mental ability of the people in our preparation programs.

Few people would take a stand against intelligence as a desirable characteristic, if it were not for the problem of measuring it. This measurement problem rears its ugly head in just about everything we do, and it deserves some comment here. I spoke earlier of using standardized tests as one part of the process of selecting students for profesional preparation programs. I'll elaborate on that position at this time.

I begin by freely acknowledging certain limitations of tests: (1) they are imperfect predictors, (2) they are sometimes biased, and (3) they are often misused.

The fact that tests are imperfect predictors hardly needs to be stated. However, given the well-known imperfections in the usual measures of success, such as grade-point averages and on-the-job ratings, it is a wonder that any predictor achieves better-than-chance correlations with such criteria. Grades are notoriously unreliable and meaningless, and in addition, at the graduate level especially, the range—largely A's and B's—is usually so restricted that correlations with predictors could hardly be impressive. Even so, modest to moderate correlations are commonplace in studies that have been published.

The ultimate criterion, of course, is on-the-job success, and here again the criterion problem confronts us. All professional fields face the same problem of being unable to define success with enough precision to measure it, and ours is no exception. Consequently, it is rather hopeless to try to find any predictor that will forecast that which we can't define and agree on. We usually settle for performance ratings as our success criteria, but measuring the effectiveness of a school administrator is about as tricky as measuring the length of a cobra—it wouldn't be hard to do if the thing would just hold still for us. So, as I said earlier, we tend to get low but positive correlations between test scores and on-the-job ratings. I am always amazed that there is any relationship at all when I look at the rating scales that are used and when I consider the rating processes that are all too common. The typical rating instrument consists of a composite of such immeasurable irrelevancies as "voice modulation" and "appearance," together with such ambiguous vacuities as "emotional health," "morality," and "professionalism"—all of which are thrown together with some equally meaningless judgmental categories and solemnly declared to be a "scale." Why should any predictor be expected to correlate highly with the product of such a monstrosity as this?

So, tests are far from perfect predictors. They do surprisingly well, though, in giving us predictions that are useful actuarially, even though they must be used with great caution when we deal with individuals. Hence, we must not make the mistake of using *only* test scores; instead, we must use appropriate test scores together with as much other relevant information as we can get.

The second limitation of tests is that they are sometimes biased. If one defines bias as that quality in a measuring instrument that produces significantly different test score means for different populations of individuals, then most if not all verbal tests are indeed biased; for example, blacks as a group do not do as well in such tests as do whites. Furthermore, we have some evidence to show why this is so; for example, blacks possess a different set of knowledge than do whites, their response patterns and guessing behavior on tests are different from that of whites, and they (blacks and Mexican-Americans as well) do relatively better in nontraditional measures than on traditional ones. All of this suggests that people with cultural backgrounds different from the culture reflected in the test items will not ordinarily do well on the test, and this includes whites from the lower socioeconomic strata of our society. It suggests futher that we should continue to work toward "culture-free" tests, although it is doubtful that we will ever succeed in producing one.

It might appear that I have just blown my argument, but I doubt it. I have admitted that tests are far from perfect predictors, that they contain biases that we should eliminate insofar as possible, and that minorities and other identifiable groups do not tend to do well on the type of test that is traditionally used for admission purposes. But admission and selection are exercises in *prediction*, and the crucial issue is whether the predictors do their job well enough to help us. It could well be that the intermediate or ultimate success criteria that we use are biased in the same ways that the tests are. If so, this is lamentable, but as long as we continue to judge performance in our preparation programs and on the job as we do now, we must utilize the best predictors available, if we are going to select people at all—and *that,* I am distressed to say, is more of an issue than one might think!

But how should we deal with the fact that some groups do poorly on tests? Doesn't this prove that we should abandon the tests because they are biased? No. To illustrate, let us pretend that I have been asked to produce a simple device that will serve gross screening purposes for eliminating people who could not expect to become champion weight lifters. If I invent a hand squeezing gismo that measures strength of grip, the chances are that it might do a fairly good job of identifying weaklings who might as well not try to become champion weight lifters. But, alas, it will undoubtedly be "biased" against women! The important question is whether the gismo is useful in screening out the people who wouldn't have much chance of succeeding if they were in. Unfortunately for the girls, most of them just weren't built to lift weights—praise the Lord—but they shouldn't blame the gismo for the fact that it exposes a weakness in womenkind. Some of this weakness might even be culturally induced, but until something is done about it we shouldn't condemn the messenger for the message that we don't like.

When we approach the question as one of test *fairness* rather than test *bias,* we see the usefulness of tests in a different light. My gismo was biased, but not unfair. If an entrance test such as the Scholastic Aptitude Test (SAT) systematically under-predicts freshman grade-point averages of blacks as a group, then it is an unfair test as well as a poor predictor of academic success. But the SAT does *not* tend to under-predict for blacks; if anything, it tends to over-predict, but at any rate it usually adds to the accuracy of predictions of academic performance. By abandoning the SAT, then, because blacks or other groups tend not to do well on it, we merely shift the failure of these people from the admission process to the freshman year of college. Remember, I am not arguing that the criterion variable itself—college grade-point average—is "fair," but as long as a test has at least a modest degree of predictive validity, it should not be blamed for what it predicts. The main point here is that tests such as the GRE at the graduate level or the SAT at the undergraduate level are just as useful for prediction purposes for one racial or ethnic group as they are for another. The regression lines look about the same—they are just lower for the minority groups. Because of this tendency for the minorities to score lower in such tests, we cannot use majority group standards in judging their performance or we won't have very many of them in our programs. This means that we *must* be "biased" in applying standards if we want very many minority students—and I do want them. I am saying that we must be biased *for* minorities, not *against* them, and I am confident that most colleges and universities are biased for them in the manner that I have just described. It also means that, other things being equal (which other things rarely are), we should think twice before we select a minority candidate with a 5th percentile score in preference to one with a 45th or 75th percentile score.

If we abandon tests because they are biased and imperfect, what *will* we use? Undergraduate grade-point averages do not correlate as highly as does the GRE-Verbal with success in graduate school, for students in Education. Letters of recommendation are about as useful as divining rods in locating promising talent.

Most letters of recommendation, as Sam Goldwyn was reported to have said of oral contracts, aren't worth the paper they are written on. One reason is that letters of recommendation all tend to look alike, whether written about the Pope or the Boston Strangler; hence, their usefulness in making finer distinctions is less than completely obvious. To my knowledge, nobody has ever found them to be worth anything, and with open records they are perhaps worth even less, although it is hard for me to imagine that—given the fact that they were worthless even before open records. As for interviews, studies of their predictive power reveal, almost without exception, that interviewing as it is usually practiced is not of any substantial value as a selection tool. Ratings, as I indicated previously, are ridiculous. All of these alternatives, then, are even more imperfect than tests are—and at least as biased.

I come now to the third admitted limitation of tests. No one in his right mind would argue that tests are not frequently misused. For one thing, many tests and inventories are not appropriate for selecting students or administrators. Only those tests that measure variables that are important to the user, and that the user is competent to interpret, can be defended.

Another flagrant type of misuse of tests such as the GRE or the National Teacher Examinations (NTE) is to use them to judge performance on the job—a purpose for which such tests were never intended. No sensible person would argue that the GRE or NTE should be used for making decisions concerning in-service personnel, nor should they be used beyond the admission stage of preparation programs.

Still another egregious misuse of tests is the come-hell-or-high-water application of cut-off points, especially if the cut-offs are high. Tests are generally better for screening out extreme lows than they are for selecting a few highs. Unrealistic cut-offs are especially hazardous with minority candidates. On the other hand, danger zones could very well be established (somewhat lower for minority groups), indicating test performances below which compensating evidences of great strength are required.

While recognizing the frequent misuse of tests, let us not forget that the alternatives are also misused, perhaps even more outrageously. The quackery that is so pandemic in the use of interviews, rating scales, and letters of recommendation ought to remind us that misuse is not unique to tests. Misuse of any tool is to be deplored, but to single out tests and contend that we should renounce them rather than correct the abuses, while retaining the abuse-laden alternatives, is a curious display of nonreasoning.

The current clamor for the abandonment of standardized tests, regardless of their uses, is unfortunate and should be strenuously resisted. As a case in point, a recent report informs us that the NEA Task Force on Testing resolutely stated: "The National Teacher Examinations are an improper tool and must not be used for teacher certification, recertification, selection, assignment, retention, salary determination, promotion, transfer, tenure, or dismissal." I can't argue with the Task Force's contention that NTE should not be used for several of the stated purposes. But the Task Force doesn't concentrate its firepower on acknowledged enemy positions; instead, it cries havoc and lays waste to friend and foe alike in one indiscriminate exercise in overkill. If it is improper to use test scores for making salary or dismissal decisions and the like, says the Task Force, then, by God, they shouldn't be used for anything. This is utterly asinine. To discard tests because they won't do everything is like discarding any other tool because it won't do everything; a saw, for example, isn't worth a damn for pounding nails, but it is a good tool to have around if one wants to cut a board in two.

The growing anti-test hysteria extends beyond the National Teacher Examinations. Of special concern to us should be the increasingly frequent attempts to ban the use of tests for selecting school administrators. For reasons that have never been clear to me, school administration has historically provided a haven for more than its share of mental lightweights, even though we have had test data to embarrass us. Permit me to back up this contention with some figures that I wish weren't true. As Mark Antony said at Caesar's funeral, "If you have tears, prepare to shed them now." The 1970 Edition of the Miller Analogies Test Manual shows us that people preparing to be school administrators achieved the lowest mean scores of any of the graduate and professional school groups for which norms were reported. The mean score for students in educational administration was 44.5, compared with 65.3 for psychology, 49.6 for rehabilitation counseling and social work, 46.4 for nursing, 44.6 for theology, 54.1 for business administration, 53.5 for engineering, 64.5 for medicine, and 68.4 for applicants for psychoanalytic training. Even the students in education, other than educational administration, achieved a mean score of 46.9, which seems to imply an odd tendency on our part toward *seeking out* dullness wherever it surfaces in the talent pool. What would happen if we didn't even have standardized test data to remind us of our folly is not pleasant to contemplate.

No matter how we select our students, we are going to make mistakes. We will make fewer mistakes if we think clearly about the types of performance that we value and then find or develop appropriate predictors. We know enough about all known prediction devices and their limitations to realize that we can't expect miracles of any of them. Certainly we should recognize the stupidity inherent in making selection decisions on any one type of information, including test scores; but we should also cry "Hold! Enough!" when anyone suggests eliminating all standardized tests from the selection process, when the research tells us that certain tests are the best friends that we have.

After that long detour into the usefulness of tests, I now return to some other qualities needed in school administrators.

Interpersonal. We have known for a long time that school administrators spend most of their time with people and seem to prosper to a great extent in proportion to their ability to work with people effectively. It should be no surprise, then, to find an *interpersonal* category here. Looking ahead to the 1980s, I see no diminution in the importance of interpersonal considerations; in fact, there is every reason to assume that they will be even more important in the future than they are now. For one thing, some of the school principal's cherished prerogatives are slipping away. He can no longer expect teachers to be as subservient and tractable as they have been in the past. He must be able to rally the support of teachers who are no longer enthralled with hierarchical authority. His style must be that of drawing out the best in others in a collegial type of relationship, not deciding what is best and expecting compliance out of personal "loyalty" or servility. Having served as a department chairman, I think I have a feeling for situations in which the head man's power has little to do with his position in the organization. I see school principalships heading in this direction, with respect to relationships with not only teachers but also parents and others in the school community. Time was when the principal's word was law; now he must satisfy his constituents or face a demonstration or a boycott.

The assessment of abilities in the interpersonal relations field is not easy. Biographical data can be assembled to reveal the applicant's past record as an influencer or leader of people, and this is perhaps the best predictive evidence that we can get. In addition we can profitably use sociometric devices in the early phases of the preparation program, if we remember that there isn't a perfect relationship between leadership requirements in different groups or situations. I wish I could report that in-basket responses and performances in other simulations were more helpful as predictors of on-the-job behavior, but so far I have not been dazzled by our findings. I still have hope, though, and some of our studies have produced encouraging results.

Moral. When I speak of morality among school principals, I am not suggesting that they are typically subject to unbridled indulgence in carnal passions. In fact, I can't conceive of a less licentious group, outside of a convalescent home for retired fundamentalist ministers. My concern is with the broad issues of rightness and wrongness, with sensitivity to human need and feeling, with compassion for the weak and helpless, with ability to love the unlovely, with passion for freedom with responsibility.

A moral school principal, as I am using the term *moral*, is one who takes seriously the school's accountability for helping individual human beings to realize their full potential. He is almost militant in his determination to overcome obstacles to a decent educational program. He is a believer in law and order, and he demonstrates it by operating the school in a lawful and orderly manner. He is more concerned with the depth of students' understanding than the length of their hair. He is outraged by the erosion of citizens' constitutional rights, and he scrupulously protects the rights of the citizens in the classrooms—including the right of teachers and serious students not to be victimized, harassed, threatened, or even disturbed by hell-raising hooligans who have not yet learned the interdependence of rights and responsibilities. He is, in short, a thoroughly *human* being who is dedicated to the proposition that the schools can be significant instrumentalities in the fulfillment of the American dream—a democracy with liberty and justice for all.

I hope that I am not unbearably sentimentalizing this aspect of the principal's personal makeup, but I am convinced that we have neglected the human, the philosophical, the moral dimensions of administration in the past and we cannot afford to continue this neglect. The kinds of problems pressing in on the schools, and likely to increase in the coming years, cry out for empathy, concern, and compassion—not for the dehumanization that threatens to overwhelm us.

There are no easy ways to measure qualities such as these—which seems to be true of everything I have talked about. The inventories that purport to measure attitudes, values, prejudices, and the like have not proved to be very useful as selection or screening tools, although such instruments might be of some value for other purposes. Personal history is always helpful, if it can be learned from people who know the candidate well—but not by way of letters of recommendation or rating scales. Talking face-to-face or on the telephone with several people who know the candidate well is certainly worth the cost. In my opinion, the most productive source of information about candidates' basic orientations toward the deeper issues of life is the first phase or two of a multiphase preparation program, where case and in-basket discussions, structured laboratory exercises, and bull sessions can be quite revealing—and we have used this approach quite successfully in local school systems as well as in our university program.

Emotional-Physical. This last category is included because of a feeling that there is something crucial about the body chemistry of anybody who is under considerable strain much of the time.

At one time physical size was a recognized criterion for selection as a teacher in the rural schools of the Midwest where I grew up, for the simple reason that school boards wanted somebody around who could whip the unruly pupils. The recent assaults on teachers by pupils—numbering in the thousands in our major cities—suggests that ability to defend oneself might well become a prime teacher selection criterion. Since school principals are also victims of such attacks, sharing with teachers the hazards of the internecine violence that has shattered the serenity of many schools, one might anticipate a flurry of articles in our journals dealing with the selection of principals, advocating the use of such criteria as quickness on the draw, keenness of peripheral vision, or hardness of heart, head, or hand.

Ridiculous and frivolous as all of this might seem, I am inclined to think that the pressures if not the hazards of the job are becoming increasingly severe. I have no doubt that the man required for the principalship, especially in the "difficult" secondary schools of the inner cities, will have to be able to live constantly and constructively with tension, conflict, challenge, and frustration, if not with actual physical danger. What kind of man must this be, and how can we distinguish between those candidates who have and those who do not have the stomach for such a position? I know of no dependable means of measuring such characteristics for screening purposes, although some personality inventories purport to measure such traits as "emotional instability," "nervous manifestations," and "fear and anxiety." The study of behavior in simulated stress situations might appear to be a profitable course to pursue, but we have never been able to simulate the agonies of the job itself. Many who could not stand the heat probably eliminate themselves from the kitchen, but we must be concerned about those who do not, as well as those who eliminate themselves but shouldn't. The temptation to employ the techniques of quackery is especially great when one deals with the intricacies of the human temperament. Some of us still cling to the notion that we can read the other fellow's mind and character in an interview, and although interviewing can be useful as a selection tool under certain conditions, most studies indicate that interviewing as we almost always do it is about as helpful as palmistry when used as a personality assessment device. When I ponder the ghastly errors that we make in judging people by way of interviews, I am reminded of Captain Robert Fitz Roy of H.M.S. *Beagle*. When Charles Darwin applied for the post of naturalist for a charting survey by the *Beagle*, Captain Fitz Roy nearly rejected him because his nose suggested a lack of "energy and determination." Thus the shape of Darwin's nose, as interpreted by an interviewer, almost cost the world the information that provided the basis for *Origin of Species*, one of the most influential books ever written.

Up to this point I have not mentioned a quality that is possibly the most important of all. I shall call it adaptability, or change-proneness. It doesn't neatly fit any of my categories, but it has ramifications in all of them. Although I take the position that schools are likely to look and act like schools as we know them for the next few years, and I insist that the kind of man needed in the principalship in the future will be much the same kind that schools should have had in the past, there is an increasingly urgent need for principals who can respond effectively to changing and uncertain conditions. In the past, our schools generally survived the tenure of principals and other administrators whose devotion to organizational stability was so compelling and pervasive as to render them incapable of any but the most superficial changes. The schools will not survive this kind of resistance to change in the future—even though, as I mentioned earlier, the principal's freedom to act as he chooses, like the old gray mare, ain't what it used to be.

The measurement of adaptability in individuals has eluded us almost completely up to the present time. One reason is that we have never defined the term with enough clarity and precision to research it. If we define adaptability as one's ability to make suitable adjustments to requirements or conditions, as my dictionary does, then we face the problem of determining what is *suitable* and what the *requirements* or *conditions* are. In fact, concern for adaptability forces us into the uncomfortable position of having to solve a multiple criterion problem by predicting individuals' success in a series of unpredictable situations, even though we have not been able to define and measure "success" in known situations. Nevertheless, the man needed in the principalship in the future is the one who can deal effectively with needs as they arise, who can adjust to new and often highly unprecedented situations, who can create the right kinds of problems and then create solutions for them.

All of this, then, has been offered in support of my contention that the most important single thing we can do to enhance learning in schools is to get top-quality students into our preparation programs—in teaching, administration, and the other professional fields.

The Training

Given a student group composed of trainable individuals, our next crucial responsibility is that of providing appropriate training for them. Once again I see an opportunity for professors and chief state school officers to work together in establishing standards and implementing programs that will not tolerate second-classism.

I hope I will be forgiven for a moment of self-flagellation in admitting the obvious: our teacher and administrator preparation programs have not, in general, inspired much enthusiasm on the part of the students or anybody else. Most of our offerings are not *programs* at all, but collections of courses resulting more from convenience and chance than from purpose. Whereas the friendly observer might view this unbridled diversity as a wholesome accommodation to various needs, a more honest and realistic appraisal might reveal a looseness of conceptual design that borders in the obscene. This benevolent anarchy, to use Clark Kerr's term, hardly produces professionals with a body of understandings, skills, or attitudes that the public can count on.

Although our methods vary a great deal, even within training institutions, studies of what we tend to do most of the time are disturbing. Our courses need not have the soporific or even emetic effect that they sometimes have on our students. We tend to depend too much on methods that are ill-suited to their avowed purposes. About five years ago, in connection with an article that Lloyd McCleary and I were writing,* I made a study of seventeen methods used in school administrator preparation programs. I summarized the available research and pointed out the strengths and weaknesses of each method. In one exhibit, I categorized the methods as high, medium, or low in effectiveness and practicality, in terms of three levels of learning and three kinds of skill.

Instructional methods are not good or bad, effective or ineffective, except with reference to how well they are performed and the purposes they are intended to achieve. Reading, for example, is a good way to gain familiarity with a large body of subject matter, but it is not a good way to develop skills. Since skill at *applying* learning in real-life situations is our goal in so much of what we do with students in educational administration, we should plan our programs realistically if we intend to get such an outcome. In the preceding exhibit, notice which methods tend to be of medium or high effectiveness in producing learning at the application level. It is those listed at the bottom of the exhibit—gaming, simulation, human relations training, clinical study, team research, and internships. Across the nation as a whole, departments of educational administration are doing more of some of these types of training than they did a decade or two ago; however, actual full-time internships are still the exception rather than the rule, and the other skill-producing methods are used rarely when compared with such old standbys as reading, lecturing, and group discussion.

In my own institution, we have evaluated our methods rather systematically for a number of years, especially with respect to our students' perceptions of the value of the methods in accomplishing their purposes. Although there are exceptions, of course, our students rate laboratory training exercises and simulations very high.

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*McCleary, Lloyd E., and Kenneth E. McIntyre. "Competency Development and University Methodology." *Bulletin of the National Association of Secondary School Principals*, 56, 362 (1972), pp. 53-68.

	Levels of Learning			Competencies to be Learned		
	Familiarity	Understanding	Application	Technical	Conceptual	Human
Reading	High	Med.	Low	Low	Med.	Low
Lecture	Med.	Med.	Low	Low	Med	Low
Discussion	Med.	Med.	Low	Low	Med.	Low
Field Trip	Med.	Low	Low	Low	Med.	Low
Case	Low	High	Low	Low	High	Low
Scenario	Low	High	Low	Low	High	Low
Individualized Instructional Package	Low	High	Low	Low	High	Low
Computer-Assisted Instruction	Low	High	Low	Low	High	Low
Tutorial	Low	Med.	Low	Low	Med.	Low
Student Research	Low	Med.	Low	Low	Med.	Low
Laboratory Approach	Low	High	Med.	Med.	High	Med.
Gaming	Low	High	Med.	Med.	High	Med.
Simulation	Low	High	High	High	High	Med.
Human Relations Training	Low	High	High	High	High	High
Clinical Study	Low	High	High	High	High	Med.
Team Research	Low	High	High	High	Med.	Low
Internship	Low	Med.	High	High	Med.	Med.

High, Medium, Low—Extent to which the method, when employed, tends to be practical and effective in learning the designated skills at the levels desired.

They also consider the internship, which we require in a full-time basis for one semester, to be indispensable. I agree with them. Laboratory exercises and simulations are the nearest thing to real life that we can bring into the university classroom, and they are interesting and exciting for professors as well as students. For some purposes, they are even better than the real thing, because they can be controlled better. However, I regard a full-time internship of at least a semester to be an exceedingly important aspect of our program. I cannot see how we can say we are preparing people to enter such a demanding field as educational administration without exposing them to the realities of the job—and I don't mean after school or during the lunch period while one is a full-time teacher.

Financing internships is a difficult matter. In our case, we manage to find enough school districts and education service centers that are willing to employ our interns for a semester, at the minimum salary for a teacher, to keep us in business. If all of our universities required full-time internships, they could not be financed this way. We need enough state financial support to subsidize a limited number of topflight internships through the programs of a few strong universities. Such people more than earn their salaries, so the host school districts could pay some part of the bill and benefit immensely from the program.

A major issue seems to be arising over where the control over admission to professional preparation programs, and over the programs themselves, should reside. Traditionally, such controls have rested largely in the colleges and universities, but now there are many who argue that considerable control should be placed in the hands of professional associations at the state and local levels. I won't get into that controversy here, simply because I haven't studied the issues enough to speak intelligently on the subject. We know that professional associations are getting into the in-service training business in a big way, and we can see nothing catastrophic that has happened as a result. I am inclined to think that we could very well work out cooperative arrangements whereby we would be working together as partners rather than as adversaries, as far as in-service training is concerned—and this is happening in many instances now. I must admit that I get a bit nervous when I think of professional associations exercising a great deal of control over admissions, training programs, and licensure.

Since the term *competency* is in the title of my talk, I feel obligated to discuss competency-based preparation programs, at least briefly. I'll not get into the matter of competency or proficiency testing of elementary and secondary school students for promotion or graduation purposes. This is entirely a different matter, and I trust that others have discussed it at this institute.

As you know, there have been some heated debates over the wisdom or folly of competency-based programming for training professionals. As you will see, I take a stand firmly on both sides of that fence. As I read the literature and as I reflect on my own limited experience with this issue, I see about five major arguments on each side of the question. The main arguments against competency-based education (CBE) seem to be:

1. CBE is a response to pressure, lacking firm grounding in any sound theory or system.

2. In their search for that which is easily measurable, CBE advocates tend to break behavior down into trivial fragments.

3. Training in the CBE mode is reduced to the prescriptive level, limiting the professional's freedom of action and reducing flexibility, spontaneity, and creativity.

4. Lacking any clear definition of "success" from which to develop descriptions of needed competencies, advocates of CBE tend to produce lists of competencies from "seat-of-the-pants" hunches, rather than derivations from conceptual frameworks, research, theory, experience, and need.

5. CBE tends to overemphasize *process* as the primary determinant of outcomes, failing to recognize that *inputs*—especially personnel inputs—are much more important determiners of learning products.

On the other hand, those who support CBE counter the arguments of critics with several of their own, including the following:

1. Stating one's objectives explicitly produces better instruction, by leading to a more meaningful selection of teaching strategies, materials, and evaluation procedures.

2. Although many CBE objectives are at the lower levels of learning, cognitive functions are interrelated; for example, one must recall or recognize information in order to synthesize it.

3. Although some competencies are too complex for specification of measurable and acceptable behavioral indicators, we can apply criteria or guidelines which define the type of behavior that is sought, as a class or category.

4. CBE recognizes and deals with individual differences in learners.

5. Although cost is not a major argument, and although some of the requirements of CBE could well cost more than traditional training systems, CBE eliminates some unnecessary costs by "testing out" of certain activities by way of pretests.

I recognize both the strengths and the weaknesses of the CBE approach. It has been my experience that there are far more advantages than disadvantages inherent in planning instruction carefully, beginning with broadly conceived ideals and goals and working toward explicitly stated objectives and activities. If nothing else, merely asking oneself *why* he is going to do something with trainees is a useful habit to get into, because it is easy to do things for the wrong reasons—because we have done them before, or because we enjoy doing them.

I would not argue that all components of a training program must be treated in a CBE mode; in fact, I think that such a requirement is an exercise in wishful thinking. Some of my colleagues and I agree that perhaps 40 percent of the training activities that we have been associated with can be effectively accommodated to CBE. It is quite possible that only our own limititions keep us from going 100 percent to CBE. This does not worry me, however; my position is that CBE makes sense for some kinds of learning and training goals and I advocate using it in those instances. When other approaches seem to be more appropriate, I use them instead.

CONCLUSION

During the past few minutes I have attempted to approach the topic of learning largely with respect to the impact that leadership personnel in schools have on the learning products that are achieved. I have argued that you in the state departments of education and we in the universities have a great responsibility to work together to produce excellence in our university training programs. We can do this by being more selective in our admissions practices and by being more discriminating in our training programs. We must set high standards for the accreditation of institutions that prepare leadership personnel; if we do, I am convinced that there will be far fewer institutions in the training business. I recognize the political facts of life that militate against the elimination of ineffective programs—and here I can only slink away as I say, "That's *your* job!"

The views expressed in this paper are more fully treated by the writer in the following publications:

Kenneth E. McIntyre, "Should Standardized Tests Be Used for the Selection of Educational Administration Students?", *UCEA Review,* Volume XVI, No. 4, April, 1975, pp. 14ff.

——, "Six Studies on the Prediction of Administrative Behavior," *UCEA Quarterly,* Winter, 1968, pp. 45-54.

———, "The Selection of Elementary School Principals," *The National Elementary Principal,* April, 1965, pp. 42-46.

———, (with Lloyd E. McCleary) "Competency Development and University Methodology," *NASSP Bulletin,* March, 1972, pp. 53-68.

———, "The Way It Was/Is," *The National Elementary Principal,* July-August, 1974, pp. 30-34.

———, "A Proposed Program of Preparation," Chapter 7 in *Professional Administrators for America's Schools.*" Yearbook, 1960. Washington, D.C.: American Association of School Administrators, 1960, pp. 174-191.

———, *Selection and Recruitment in Fields Other Than Educational Administration.* Austin: Department of Educational Administration, University of Texas, 1965.

———, *Selection of Educational Administrators.* Austin: Department of Educational Administration, University of Texas, and University Council for Educational Administration, 1966.

———, *In-Service Education: A Guide to Better Practice* (with Ben M. Harris and Wailand Bessent). Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969.

———, (Ed.) *The Principalship in the 1970's.* Austin: The University of Texas Press, 1971.

———, "Simulating the Process for Selection of Administrators," Chapter 5 in *The Use of Simulation in Educational Administration,* Dale L. Bolton (Ed.). Columbus, Ohio: Charles E. Merrill Publishing Company, 1971.

———, "Administering and Improving the Instructional Program," Chapter 6 in *Performance Objectives for School Principals,* Jack A. Culbertson, Curtis Henson, and Ruel Morrison (Eds.). Berkeley, Calif.: McCutchan Publishing Corporation, 1974.

———, "The Recruitment, Selection and Preparation of Educational Leaders,"(with Kenneth St. Clair). Chapter 7 in *Leadership: The science and the Art Today,* Luvern L. Cunningham and William J. Gephart (Eds.). Itasca, Illinois: F. E. Peacock Publishers, Inc., 1973.

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Chapter XI

LEARNERS WITH SPECIAL PROBLEMS: WHAT CAN CHIEFS DO?

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We are talking about all children who deviate from the so-called normal enough to need special educational help. Included are the mentally retarded; speech, hearing and visual handicapped; emotionally disturbed; learning disabled; miscellaneous physical and other handicapping conditions; and gifted.

Although exact figures are not available, Public Law 94-142 refers to 12 percent, and so did Romaine Mackie in the U.S. Office of Eduation many years ago . . . one in eight . . . every third family in the country and every set of grandparents on the average.

We had help in removing our attic-cellar hide-away/guilt complex . . . Pearl Buck . . . Dale Evans . . . John Frank . . . Mrs. Spencer Tracy . . . and organizations like CEC, AACLD, BEH and the President's Committee on Mental Retardation. We went from $100 per year or less for a homebound child in some states to possibly more than $3 billion by 1982 from the federal government.

Our emphasis at this point should be on the future. We need a practical perspective to do so. It may help prepare for that difficult task by (1) taking a raft trip through the rapids of the Colorado River, where the present is momentary, buried within rock formations that date back 2 billion years; (2) seeing an old Leslie Howard movie called *Berkeley Square*, in which the past was remembered, the present was visible, and the future was shrouded in mystery; or (3) reading Alvin Toffler's *Future Shock*, which accused educators of confining themselves to the known rather than stretching their creativity toward a world unknown to us but to which our children will be compelled to adjust.

He wrote:*

"When it comes to locating the child in time, however, we play a cruel and disabling trick on him. He is steeped, to the extent possible, in his nation's past and that of the world. He studies ancient Greece and Rome, the rise of feudalism, the French Revolution, and so forth. He is introduced to Bible stories and patriotic legends. He is peppered with endless accounts of wars, revolutions and upheavals, each one dutifully tagged with its appropriate date in the past.

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*Toffler, Alvin, *Future Shock*, pp. 374, 382.

"At some point he is even introduced to 'current events.' He may be asked to bring in newspaper clippings, and a really enterprising teacher may go so far as to ask him to watch the evening news on television. He is offered, in short, a thin sliver of the present.

"And then time stops. The school is silent about tomorrow. 'Not only do our history courses terminate with the year they are taught,' . . . wrote Professor Ossip Flechtheim a generation ago, 'but the same situation exists in the study of government and economics, psychology and biology.' Time comes racing to an abrupt halt. The student is focused backward instead of forward. The future, banned as it were from the classroom, is banned from his consciousness as well. It is as though there were no future.

" 'No one—not even the most brilliant scientist alive today—really knows where science is taking us,' says Ralph Lapp, himself a scientist-turned-writer. 'We are aboard a train which is gathering speed, racing down a track on which there are an unknown number of switches leading to unknown destinations. No single scientist is in the engine cab and there may be demons at the switch. Most of society is in the caboose looking backward.' "

A Few Trends Regarding Learners with Special Problems

Innovations . . . Paul Mort (it takes 15 years for 3 percent of the schools to try a new idea and 20 more years for most of the rest to get in on the act) . . . programmed learning and individualized instruction.

The "pioneer" resource teachers . . . sight and hearing.

The terminology breakthrough . . . morons to educable to mildly handicapped . . . brain damaged, cerebral dysfunction and neurological impairment.

Slow learners . . . three types: Traditional (75 to 90 IQ, more or less); pseudo slow learners; gifted slow learners.

Three stages of parenthood—shock, search and adjustment . . . changing attitudes and more information.

Straightening out misunderstandings, like gifted ("ripen early, rot early"), cerebral palsy (and intelligence), and race (and intelligence).

Guilt of the regular classroom teacher . . . one-room schools . . . the early 1900's and special classes . . . the 1970's and mainstreaming—and special classes?

Some Myths Regarding Learners with Special Problems

First echelon:

1. "Mainstreaming will solve all educational issues related to learners with special problems."
2. "Eliminate the label and you eliminate the handicap."
3. "Life begins at birth . . . or at 40."
4. "The courts can solve the problems of exceptional children."
5. "The gifted will muddle through."
6. "Only one way to go for learners with special problems."
7. "Mandatory legislation is the answer."

Second echelon:

1. "All it takes is money."
2. "Hold teachers accountable . . . then children will learn."
3. "Islands of progress and experimentation will spread the word . . . the candle-in-the-darkness theory."
4. "Early childhood programs are the solution."
5. "Parents know best."
6. "Teachers can keep up with their profession."

Third echelon: . . . these may be on their way toward becoming myths, but let's reserve judgment until more data are in.

1. ". . . children will continue those activities they are praised for, will imitate those adults whom they like and respect, and that some children develop faster than others." (James Gallagher)
2. Hyperactivity . . . and artificial food coloring and flavoring, coffee, fluorescent lights.
3. The IQ can be determined.
4. PKU, retrolental fibroplasia and other causes of special learning conditions.
5. Career Opportunity Programs and Teacher Corps.
6. Hyperactivity and the megavitamin theory.
7. Affection, understanding and Leo Buscaglia.
8. The disadvantaged child and Jonathan Kozol . . . the "six hour retarded child" . . . culture, language and socioeconomic status.
9. Child abuse . . . physical, emotional . . . Howard James.

Public Law 94-142: "Education for All Handicapped Children Act of 1975"

Here are some of the highlights of this landmark legislation.

On November 18, 1975, the conference report on S.6, The Education for All Handicapped Children Act, was accepted by the U.S. House of Representatives by a vote of 404 to 7. (Senate vote: 87 to 7.)

President Ford signed the bill into law on November 28. Thus S.6 became Public Law 94-142, an authorizing law which amends the Education of the Handicapped Act.

Through testimony and reseach the Congress found that there are more than 8 million handicapped children in the United States today, and more than 50% of these handicapped children are not receiving full equality of educational opportunity. One million of these children are excluded from education, while many handicapped children in regular education have not been identified.

The Congressional committees found that given adequate appropriations, state and local education agencies *can* provide appropriate special education services.

The purpose of the law is for all handicapped children to receive a free appropriate public education which emphasizes special education and related services designed to meet each child's unique needs and protects his or her rights. The law will assist states and localities in assuring the effectiveness of their efforts.

The new law includes not only classroom instruction, but special instruction in physical education, homes, hospitals and institutions. The term "related services" includes transportation, speech, audiology, physical and occupational therapy, recreation, diagnostic and evaluative medical and counseling services, as well as identification of handicapping conditions.

The term "individualized education program" (IEP) means a statement for each handicapped child developed in any meeting by a representative of the local education agency or intermediate education unit who shall be qualified to provide or supervise the provision of specially designed instruction to meet the unique needs of handicapped children, the teacher, the parents or guardians of the child, and the child when appropriate. The statement must include the annual goals and short term objectives, a statement of the specific educational services to be provided, and the extent to which the child will be able to participate in regular education programs, anticipated date for initiation and alteration of services, and appropriate objective criteria, evaluation procedures and schedule for determining, at least on an *annual* basis, whether instructional objectives are being achieved.

Definitions are included for excess costs, native language and intermediate education unit.

Beginning in 1978 the formula for state entitlements will change from counting all children 3-21, to counting the number of handicapped served, ages 3-21, times a percentage of the national average per pupil expenditure, ranging from 5% in 1978 to 40% in 1982.

There are two limitations to the amount authorized to be distributed to states: First, 12% of the number of all children aged 5-17 in the state; second, a learning disabilities limitation of 1/6 of the 12%.

In 1978 a pass-through provision detailed in the law will go into effect, with 50% of the state's allocation to be distributed to local education agencies. In 1979, 75% of the funds will be distributed to LEAs.

Also, beginning in 1979, federal dollars spent by the SEA for direct or related services must be matched by state funds on a program basis. This requirement will be applicable only to major program areas and will not require new state money.

In order to be eligible for federal funds an SEA must develop a state plan that contains written assurances for the identification, location, and evaluation of all handicapped children, regardless of the severity of their handicap, a full services timetable for all handicapped children, and due process procedures.

Other required assurances are procedures for parent consultation, assurances that a child will be educated in the *least restrictive environment,* and a program of personal development. SEAs should also include a process to disseminate information and promote education of all handicapped children within the state, and a certification of the actual number of children receiving special education and related services in the state.

Further assurances for eligibility include nondiscriminatory testing, protection of confidential information, an individualized plan for each child and appointment of surrogate parent when necessary.

By September, 1978, all handicapped children in the state between the ages of 3-18 will have available to them a free appropriate, public education. The age range is extended in 1980 to ages 3-21. However, the requirement does not apply to the before 5 and over 18 populations of handicapped children if it is inconsistent with state law.

A specific eligibility requirement of the law pertains to state priorities for service. The first priority is for handicapped children not receiving an education. The second priority is for service to the most severely handicapped children currently receiving an *inadequate* education.

Each LEA must maintain, review and revise the individualized child's plan as needed but not less than once yearly. As in P.L. 93-380, the state must assure that handicapped children are educated with nonhandicapped children to the maximum extent appropriate.

The state plan shall set policy so funds will be spent (1) to provide free education for handicapped children and (2) to set forth a description of programs for personnel development including in-service training of general and special education personnel.

The law requires that the state must maintain procedures for parental examination of records of identification, evaluation and placement and to have in independent educational evaluation of the child should parents desire such action.

Additionally the SEA must provide written prior notice to parents regarding change or referral to change the identification, evaluation and educational placement of a child, and the notice should be given to the parents in their native language.

The Act also contains a special preschool incentive for states so that grants may be obtained for services to handicapped children ages 3-5 at $300 per child; however, this is an authorization figure, not an appropriation.

The 1977 funding limit is $200,000,000. By 1982 it could reach $3.16 billion—becoming at least a "little brother" of the highways and the military!

SURVEYS OF SEA'S

(Learners with Special Problems)

SUMMARY

23 states selected randomly; 19 responses.

Current involvement is primarily at elementary and secondary levels; preschool emphasis is coming up fast; the gifted continue to lag.

Need felt for greater staff involvement at the preschool level (including the gifted), but also at secondary and post secondary levels (to less extent).

Close cooperation is indicated with state and private colleges and universities, junior and community colleges, public and independent schools, county and other political subdivisions and parents; cooperation with industry lags.

A strong feeling that state education staffs are well-qualified to pursue activities related to learners with special problems.

Most State Education Agencies felt they were unhampered in their efforts to work in this field. (They could have indicated—but seldom did—possible hampering by federal, state, county or other political subdivisions' laws and regulations, colleges and universities, schools, industry and parents. In fact, they indicated that most of these sources encouraged their efforts—industry and county levels to lesser extent.)

In a list of topics related to this subject, *deep involvement* (10 or more of the 19 state responses) was indicated in the following:

Accountability
Administrators—foundation in Special Education
CEC—national and state levels
Child study teams
Competency-based teacher education
Disadvantaged children; Special Education aspects
Early childhood diagnosis and programs (but earlier indicated a need for even greater involvement)
Individualized instruction
Instructional materials centers
Legislative developments
Litigation
Mainstreaming of exceptional children
Parent education
Parents' ''right to know''
Prescriptive teaching
Programmed instruction
Student testing and evaluation
Teacher preparation for Special Education (in-service and pre-service)
Teacher preparation—Special Education for regular classroom teachers
Vocational training

Slight or *no involvement* was indicated in the following as they relate to learners with special problems (more than 10 of the 19 states responding in one of those two ways):

Behavior management
Career education
Computer-assisted instruction
Creativity
Educational television
Genetic counseling
Industry-school relationships
Medication for exceptional children
Research areas, including artificial coloring and flavoring, megavitamin theory, nutrition, PKU, reporting to parents, ''social'' promotion
Teacher aide preparation
Team teaching

Questionnaire Regarding *involvements* and *needs* of *State Departments of Education* related to *learners with special problems*

Our State Department of Education is involved in learning activities related to the following areas of exceptional children. (Please check as many as are appropriate.)

	Preschool	Elementary	Secondary	Post Secondary
Mentally retarded (educable)	13	19	19	7
Mentally retarded (trainable)	14	17	19	7
Gifted	3	11	11	1
Emotionally disturbed	12	19	19	5
Learning disabled	14	19	19	6
Visually handicapped	15	19	14	7
Hearing handicapped	14	19	19	6
Speech handicapped	15	19	19	4
Other health impaired	13	17	17	4
Misc. physically handicapped	13	18	18	5

Other areas and levels

One different state mentioned each of the following:
Deaf-blind
Neurologically impaired
Pregnancy
Orthopedic handicaps
Profoundly mentally retarded
Multi-handicapped

Comments: "Post secondary involvement with vocational training centers"

We feel the need for *additional involvement* of our staff in learning activities related to the following areas of exceptional children. (Please check as many as are appropriate.)

	Preschool	Elementary	Secondary	Post Secondary
Mentally retarded (educable)	8	—	3	6
Mentally retarded (trainable)	10	2	5	6
Gifted	9	3	4	1
Emotionally disturbed	10	2	5	4
Learning disabled	10	1	5	6
Visually handicapped	8	1	4	6
Hearing handicapped	7	1	4	6
Speech handicapped	6	1	4	5
Other health impaired	8	1	3	4
Misc. physically handicapped	7	—	3	6

Other areas and levels Multi-handicapped

Comments: "Feel the need for more consultative help in all areas of Special Education."

"We would like to assist in training university personnel, but we are busy with other programs in our state. With the tightening up of faculty positions, hopefully universities will only hire those who are already trained, and the SEA personnel will not have to assume this responsibility."

In connection with these learners with special problems we cooperate closely with the following. (Please check as many as are appropriate.)

State colleges and universities	19
Private colleges and universities	16
Junior or community colleges	11
Public schools	19
Private schools	16
County or other political subdivisions	16
Industry	5
Parents (groups or organizations)	18
Parents (individual)	16
None of the above	—

Comments:

We feel our own staff is qualified to the following extent in pursuing these activities. (Please check one.)

Well qualified	18
Partially qualified	1
Not qualified	—

Comments: "Well-qualified except for some preschool categories."

"Currently our staff is inadequate in size—qualified, but in some cases lacking necessary experience."

More staff training is desirable in the following areas related to this subject:

1. Gifted pre-school.
2. Keeping up with new techniques being developed in all areas.
3. Organization and production of workshops.
4. Participative management.
5. Non-discriminating testing.
6. Use of paraprofessionals with itinerant instructional personnel.
7. Severely multi-handicapped (education of).
8. Learning disabilities.

We feel we are *hampered* in our efforts on this subject by the following. (Please check one or more.)

Federal laws and/or regulations	3
State laws and/or regulations	2
County or other political subdivisions' laws and/or regulations	2
Colleges and universities	—
Public and private schools	1
Industry	—
Parent groups	—
We are hampered by none of the above	11

Comments: "Federal regulations hamper by restricting use of funds."

"Hampered by not enough $ to get best qualified people."

"Limited funds with which to fully implement federal requirements."

"Need: 1) Time; 2) Financial assistance."

"Weak attitudes among professional personnel account for lack of use of para-professionals. Limited base of professional personnel contributes to absence of non-discriminatory testing and lack of programming for the multiply handicapped. Broad definitions and uncertainty as to the characteristics of LD."

We feel we are *encouraged* in our efforts on this subject by the following. (Please check one or more.)

Federal laws and/or regulations	13
State laws and/or regulations	16
County or other political subdivisions' laws and/or regulations	7
College and university cooperation	16
Public and private school cooperation	15
Industry	5
Parent groups	14
We are encouraged by none of the above	—

Comments:

Our staff has been involved in the following areas *as they relate to learners with special problems*. (Please check *each* item.)

	Deeply Involved	Slightly Involved	Not Involved
Accountability	16	3	—
Administrators—foundation in Special Education	13	4	2
Behavior management	8	9	2
Career education	7	12	—
CEC, state	12	6	1
Child study teams	11	4	4
Competency-based teacher education	10	6	3
Computer-assisted instruction	3	9	7

(continued on next page)

	Deeply Involved	Slightly Involved	Not Involved
Creativity	5	10	4
Disadvantaged children: Special Education Aspects	11	5	3
Early childhood diagnosis	17	1	1
Early childhood programs	16	2	1
Educational television	2	14	3
Genetic counseling	—	7	12
Individualized instruction	13	6	—
Industry-school relationships	2	10	7
Instructional materials centers	14	3	2
Legislative developments	18	1	—
Litigation	10	8	1
Mainstreaming of exceptional children	15	3	1
Medication for exceptional children	1	10	8
Parent education	10	8	1
Parents' "right to know"	16	2	1
Prescriptive teaching	15	3	1
Programmed instruction	12	5	2
Research:			
Artificial coloring and flavoring	—	2	17
Megavitamin theory	—	2	17
Nutrition	—	5	14
PKU	1	5	13
Reporting to parents	6	8	5
"Social" promotion	2	8	9

	Deeply Involved	Slightly Involved	Not Involved
Others (please list additional research topics that are appropriate):			
"Counseling practices with mentally handicapped youth"			
"Career exploration programs in junior high schools"			
"Involving employees in instructional activity"			
Student testing and evalution	13	4	2
Teacher aide preparation	8	9	2
Teacher preparation for Special Education (in-service)	16	1	2
Teacher preparation for Special Education (pre-service)	14	3	2
Teacher preparation—Special Education for regular classroom teachers	11	6	2
Team teaching	5	9	5
Vocational training	11	8	0

Please list additional areas in which you *are* involved or *should be* involved as they relate to learners with special problems.

	Are Involved	Should be Involved
"Proper identification of learners with special problems"	X	
"Regional programs between two or more districts to provide more economical and quality programs"	X	
"Use of assessment systems with handicapped youth"	X	
"Development of in-service and pre-service training programs for coordinators of Work-Experience Programs"	X	
"Performance-based criteria for program evalution"	X	
"Cost effective criteria for program evalution"	X	
"Planning and training for working with the severely and profoundly handicapped in the least restrictive environment"	X	
"Pilot Projects for handicapped infants, ages 0-3"	X	
"Vocational training programs at secondary level for 'Special Needs' students"		X
"More special programs for severely emotionally disturbed students, particularly at secondary level"		X

NOTE: Please attach any examples of *specific* efforts of your State Department to promote, distribute, research or further in any way activities related to learners with special problems.

View of SEA's pertaining to this subject

(Graduate students)

A survey of graduate students related to SEA's and learners with special problems resulted in the following areas mentioned as deserving emphasis, if not already receiving priority attention:*

In-service workshops and seminars for regular classroom teachers in LD, EH, EMH.

Certification requirements for special education administrators who understand needs, characteristics, and educational provisions necessary for special learners.

Requirements for provisional, temporary and emergency certificates more stringent than at present.

Supervision of provisional, temporary and emergency certificate holders.

Consistency of course requirements between the State Department and the universities within the state.

Better communication, perhaps a newsletter, originating in the State Department, going to the school districts.

Monitoring of class size.

More funds for gifted.

Permitting a child to be on the register of more than one special class.

Require regular classroom teachers to learn updated methods in class management, moving toward positive rather than negative attitudes.

Studies involving the identification of exceptional children—practices and needs—emphasis to include rural, inner city and so-called minority children.

Carefully planned training for parents of exceptional children.

Pre-school services for exceptional children so their problems will not cause social and emotional problems for them in the regular school.

Leadership role related to these (and other) areas:

> Future supply of and demand for teachers of children with special problems—anticipating future needs.
>
> Constant evaluation of certification requirements—and close cooperation with universities within the state in their development.

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*Not listed in order of frequency as mentioned by graduate students.

Conclusion

We face many problems in meeting the needs of learners with special problems. From the SEA point of view they include the following:

Unfinished business

Financing

Setting up priorities—exceptional children (which ones "first?" . . . categorical vs. cross-categorical funding), other children, career education, target dates and goals, federal/state/local hierarchies, other pressures.

Public awareness . . . in terms they can understand.

Accountability . . . consolidation . . . attacking inefficiencies and waste.

Relationships with legislatures.

Resources

Within SEA's . . . universities . . . school districts . . . professional organizations . . . parent lobbies.

In-service training

State Department personnel . . . school administrators . . . teachers . . . university instructors . . . legislators.

Into the Crystal Ball

The future for learners with special problems is what we are looking toward right now. Here are ten of the more exciting areas on which we are already started and in which we can no doubt anticipate action and perhaps even fireworks in the years ahead. They all have direct implications for State Education Agencies.

1. Our concerns for children now extend into infancy, the preschool years, and even the prenatal period. The studies of Merle Karnes and Rick Heber are just two of many symbols of this vital trend based on early diagnosis, identification,

2. Advocacy, children's rights, parent lobbying and the courts will continue to set and keep schools, communities, and legislatures on the right track. The Skelly Wright and Pennsylvania Association for Retarded Children decisions were only the beginning, now joined by lawsuits in most of the states.

3. We will not let regular classroom teachers and school administrators off the hook. They are in all this with us, and cannot give only lip service to "individual differences," "take the child where he (she) is," and other clichés we have lived with too long.

4. Language and attitudes in this field are becoming less label-oriented, less medical, less hopeless, with the accent more on a descriptive analysis of child deficits and assets.

5. "Exclusion" as a concept is on its way out, whether we are talking about children who speak a "different" language, represent a "different" culture, or come from a poverty family, or those who are severely or multiply handicapped. Every school day of "the six hour retarded child" consists of time that is precious and irretrievable.

6. Because we are eternally hopeful, we will continue to seek panaceas and welcome the future pioneers who experiment with them, regardless of their way-out qualities. New thoughts on diet, brain wave testing, and unusual therapies will get a hearing. After all, that is the broad arena from which Edgar Doll (mental retardation), Ray Graham (State Department, Illinois), Georgie Lee Abel (visually handicapped), Alfred Strauss (brain injury), and other recent greats came, although their professional emphases were obviously different.

7. The limited gifted child approach of the 1920's and 1950's was just the tip of the iceberg we are beginning to develop. We will not reach the wild extremes of John Hersey's *The Child Buyer*, but the neglect of our rich talents and intellects will be reduced—despite the excuse of other priorities.

8. New methods and approaches as they pertain to exceptional children will mature. Special Education will lead the way—again!—in areas like prescriptive and precision teaching and career education.

9. We will continue to agonize over labeling, funding sources and professional standards, but they too will be refined.

10. The media will continue to help us inform and persuade the public, through films like *The Miracle Worker*, *Light in the Piazza* and *Charly*, and books by others with the warmth of Pearl Buck.

Gallaudet, Braille, and Itard were starters, but the young people coming along today in teacher preparation programs and in our State Education Agencies are setting a pace for knowledge, experimentation, and feeling that eclipse early contributors. They capitalize on the past, but do not permit it to limit their search for how to meet the needs of each child, no matter how tough the task of walking, communicating, hearing, visualizing, thinking, adjusting and learning may be.

Chapter XII

THE CHIEFS AND LEARNING: FORGING AHEAD

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San Diego, California

The final speaker for a progran that started one week ago faces many challenges. It is not easy to follow authorities such as Tyler, Klausmeier, Hodgkinson et al. Some may wonder aloud whether there is anything left to say about learning? The power and prestige of previous speakers assembled by your planning committee, Ken Hansen and Byron Hansford, are most impressive. Those who designed and arranged this Institute deserve special and high commendation for putting together a program of significance and relevance for educational leaders.

State of the Knowledge—

Not all papers presented by previous speakers were available to me. What follows is, therefore, one individual's summary of state of the art in learning theory, learning research, and learning strategies. First a generalization. We know comparatively little about the complex process of human learning involving people with varying capabilities who hear different drummers and who are going through various stages of development at varying rates. If as little were known about the human body and its functioning during the life span as is known about the human mind and its functioning during learning, the nation would not be enjoying the degree of health and longevity that is true today. Furthermore, there is confusion as to who should assume fundamental responsibility for the basic research in human thought processes and emotions during learning. Is this the realm of the pure psychologist or the educational psychologist? Should physiologists specializing in the functioning of the brain be expected to lead the way or is it better to delegate such responsibility to behavioral scientists? Learning may be related to the functioning of the brain, but the total person is involved in the process. This could suggest that basic research in learning should be pursued by psychiatrists as well. It isn't clear how much each of the specialists is doing and it is even less definite what inter-relationships exist.

Learning and teaching, or learning and instruction, are two sides of the same coin. It can be called learning from the recipient's, or learner's, side and teaching from the instructional or the teacher's side. Unfortunately, most teaching or instructional strategies designed to date are not related closely to a comprehensive or general learning theory that has been carefully tested by definitive research. The typical pedagogue does not start with a specific learning theory or model from which flows a consistent set of instructional strategies. Learning theory has not had a decisive impact on practice. The theory or model that appears most often in the literature traces its origins to, or represents adaptations and extensions of, Thorndike's Stimulus-Bond-Response psychology and then on to Skinner. It is pragmatism, rather then theory or science-based findings, that has the greatest influence on teaching and learning strategies. Practice is said to be guided by what works even though there may be uncertainty as to why it works; if indeed it does.

Research—

Research on learning, or from the other side of the coin on teaching effectiveness, remains in its infancy. We are only beginning to ask the right kinds of questions. It is not unusual for practitioners to be confronted with conflicting findings. At one point in time, one group declared that there is a body of evidence which suggests that intelligence can be influenced by teacher expectations. In other words, if a teacher expects more from students or believes they are intelligent, this can somehow influence positively, or modify to some degree, the basic intelligence of the learner. Then some years later other research appeared to contradict these findings. The new data appeared to suggest the reverse, namely that teacher's expectations have no impact on the learner's intelligence.

Likewise, at one point in time a very popular statement was that "anyone can learn anything." Perhaps the famed psychologist to whom the statement is attributed overstated the position to dramatize a point and didn't mean to be taken as literally as some interpreted the statement. Perhaps it is better to interpret this as a goal to be pursued rather then a truism that can be implemented with the given stock of knowledge concerning human abilities and learning. Nonetheless, the notion that *anyone* can learn *anything* places tremendous pressure on the teacher. No physician would dare declare a cure for anyone suffering from "anything." Likewise, no attorney would boast he could absolve anyone of *any* misdeed. At some point in the future a better understanding of human learning and a broader spectrum of learning strategies could enable the educator to influence a wider variety of learners with different potentials and located in different contexts. This could bring the profession closer to an ideal which, if interpreted strictly as something that could be accomplished *now*, would generate a credibility gap simply because more was being promised than could be delivered. Education in general, up to this point in time, has been largely atheoretical, less scientifically oriented than it should be, and full of more research voids than is desirable.

To compound the issue, we are not putting to use what we do know about learning. In other words, the field could be performing better than it is. This is said less to engage in the process of self-flagellation than to suggest that there we have a far piece to go.

What has been noted for research in learning can be applied to education as a whole. Writing in 1955, Lamke observed:

> If the research during the past three years were to be wiped out in the fields of medicine, agriculture, physics or chemistry, our lives would be materially changed. If research in the area of teacher personnel during the last three years should vanish, education and educators would continue much as usual. There are relatively few studies among the 500 reported here which will, or should, widely affect educational practice.[1]

In 1959, Griffiths reinforced Lamke's point but applied it to school administration. As he put it:

> Should agricultural research cease and extension services be eliminated, the results would be felt soon by most of the farmers in the country. And yet a decrease in research in educational administration would concern few people. The point is that research in educational administration has not been very significant, nor has it been regarded highly by practitioners.[2]

The then Assistant Commissioner for Research of the U.S. Office of Education declared in more general terms in 1959 that "research in education has been and is incomplete in quantity, quality, and scope"; that "research in education has failed to provide the answers needed by practitioners"; and that practitioners speaking on the inadequacies of educational research would request that the time has come to "stop surveying and start investigating."[3]

My experiences tend to reinforce the observations of Lamke, Griffiths, Hall and many others who have documented the paucity as well as lack of relevance of research in education up through 1970.

As a person who has developed some degree of expertise in faculty and administrator evaluation, and as a student of the late Dr. A. S. Barr, who while at the University of Wisconsin during the 1920-1930's pioneered many of the research studies and research in teaching effectiveness, I must conclude that research in the area of personnel is of little assistance in designing more effective appraisal instruments and procedures. Most of the studies done prior to 1970 add little to comprehension of basic problems and even less to the design of new approaches simply because of the inadequate conceptualization as well as limited understanding of the teaching act *per se*. Unless you know what effective teaching is, can identify the roles or behaviors of competent teachers that are intimately related to learning, are sensitive to the educational environment in which teaching is performed, there is little hope for the design of meaningful and useful staff evaluation procedures. There are signs that we are beginning, and one can trace this to the last 10-15 years, to develop a solid and meaningful base in educational research.

Role of Professional Schools—

Part of the difficulty in generating new knowledge on learning may be traced to the fact that professional schools of education in university settings were conceived traditionally rather narrowly in terms of only preparing practitioners for

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1. Tom A. Lamke, *Review of Educational Research*, Vol. 25, No. 3, June,1955, p. 192.
2. Daniel E. Griffiths, *Research In Educational Administration, An Appraisal and A Plan*, Teachers College, Columbia University: Bureau of Publications, 1959, p. 6.
3. Roy M. Hall, "Introduction," in Griffiths, *op. cit.*, p. V.

entry into practice. The idea that professional schools should assume more dynamic roles in discovering new knowledge that will enable practitioners to resolve the persistent problems in education is not widely accepted, much less practiced, at this late date. Schools of education were created in the first instance to cope with the problems related to the preparation of practitioners. Medical schools faced a similar challenge. References are made to "clinically oriented" medical schools, meaning those concerned primarily with preparing various types of general and specialized physicians and surgeons for practice, and "research-oriented" medical schools, namely those primarily concerned with discovering new knowledge and procedures in the healing arts. Obvioulsy, the solution lies in not ignoring one or the other. There is the need for professional schools in education, as well as in medicine, that can satisfy both needs.

Multipurpose professional schools of education are those that balance the traditional function with the challenge of generating new knowledge. The reason behind the pressure for increased attention to research is obvious. The persistent problems that confront education are not amenable to resolution through use of the existing stock of information. Therefore, it is imperative that there be generated new knowledge to fill the existing voids. Faculties at universities should be contributors to the pool of knowledge and not simply users of a pool generated by other productive minds. This is easier said than done. It calls for a high degree of creativity. It also calls for a fundamental reorientation which attaches a higher priority to research in professional schools. This is necessary if schools of education, which are a part of our total educational delivery system, are to satisfy current needs. It can be argued that no school of education, nor its faculty, can sit by the side of the road merely observing what's happening at elementary, secondary, state and national level, and then heave a sigh of relief in the ivy-covered walls that they are apart and away from such demands. On the contrary, criticisms of what's happening out in the field are very direct criticisms of institutions of higher learning which prepare practitioners for the various kinds of environments they are likely to find in the world of reality.

This cannot be called the prevailing or popular view. Activist deans who strive to shape multipurpose, or more comprehensive, schools of education that focus on the generation of new knowledge as well as the preparation of a full range of practitioners may not always win popularity contests.

Fortunately, there are other agencies in our society which are concerned with the generation of new knowledge. In the last 15-20 years educational research and development centers and laboratories, funded in large part with federal monies, have generated ideas aimed at helping practitioners to perform more effectively. Educational research journals seek to bridge the gap between where the research is accomplished and where the ideas are implemented in the field. Thus, *Educational Research Quarterly* is conceptualized as a mid-range journal that seeks to bridge the communication gap between the research and development persons with ideas that can help attack some of the problems facing the practitioner in the field. In other words, the producers of research must communicate more effectively with the users of research who are the practitioners in the field. A large volume of literature is now coming out which seeks to reduce the time-span between relevant research findings and their implementation by practitioners.

Some Far-Out Conceptualizations—

Some ten years ago there came into being a group known as the "1985 Committee" of the National Conference of Professors of Educational Administration. I was part of this group. In the course of reviewing the literature on instruction in 1985 some far-out ideas were suggested by specialists in the emerging field of futurism. Concepts such as modification of the genetic code are not within the realm of probablility for implementation by 1985 or even as late as the year 2000. Others seem closer and could influence education. What is called "direct electronic communication" has been developed to a point of brain stimulation by implanting electrodes and then adding an electrical charge which results in inducing specific behaviors. This could be carried to the point where it might be feasible to build an "electronic thinking cap." There could be dreams of placing such caps on students to enable the teacher to "feed knowledge," or at least trigger desired reactions, directly and electronically. "Feeding" information directly into minds of the students is not ready now and may not be a realistic substitute for creative teaching as yet or in the near future. These so-called electro-physiological techniques to stimulate learning are more likely to reach a state of limited application some time after the year 2000. Documentation of this conclusion can be found in the writings of Quartron, who suggested that scientists lack the specific knowledge to know for sure where electrodes should be placed in the brain. More knowledge is necessary to direct brain stimulation, for experimentation to date shows difficulty in obtaining reliable effects in stimulating a single response.[4]

In addition to direct neurosurgical interventions that could control behavior, there are radio transmitters which when implanted in human subjects could perform similar functions. Such monitoring devices could provide knowledge about individual behavior. They could be useful in assessing the impact of behavioral control techniques. They could be developed into a technique for "direct evaluation" of learning objectives and might be particularly useful in appraising affective behavior. If and when these transmitters are perfected, well-disguised emotions could be revealed through microphones whose signals could be translated into visual displays on cathode ray tubes. There is the possibility that by 1985 calibration and the interpretation of signals could be far enough along to be implemented in a school setting. The use of devices that require surgical techniques for implantation on the body of a learner are not likely to be in common use in the schools during this century. The probability of their use would be much greater if the monitoring devices could be worn or taped on the body, assuming that the electronic devices are demonstrated to be reliable and not subject to manipulation by the wearer. The latter assumption is, indeed, an important one.

Experimentation with chemical devices, or drugs such as the hormones and enzymes, to influence the memory and learning of laboratory animals is much further along than those with electro-physiological devices which require implantation by neurosurgical techniques. One illustration of this is the rat brain research by Krech and his colleagues, who were looking for the physical basis for memory and were led to examine its chemical, neurological, and anatomical bases. Krech and his associates discovered that treatment with the chemical called metrazol improved the maze learning ability of what were previously identified as "hereditarily stupid mice."[5] What is more, metrazol helped these mice surpass the performance of untreated but previously recognized as "hereditarily superior mice." A catchy title for the drugs or enzymes which assist learning would be "get smart pills." As yet these "specific knowledge pills" have been used only on animals and not on humans. There are dangers inherent in experimentation with such drugs with humans, for the side effects could more than outweigh their positive benefits to learning.

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[4] Gardner C. Quartron, "Deliberate Efforts to Control Human Behavior and Modify Personality," *Toward the Year 2000*, Daniel Bell ed. Boston: Houghton Mifflin Co. 1968, p. 212.

It has been known for some time that alcohol and similar drugs influence human behavior in many ways. The more recent investigations have focused on clarifying the role of chemicals in the actual transfer of information from one neuron to another. Whether new types of drugs will be developed that could enhance learning efficiency remains to be seen. The inherent dangers in this approach to possibly stimulating human learning is evident in the fact that some of the psychedelic or consciousness-expanding drugs have escaped the control of the scientific community and are presently being distributed by subcultures within our society. Drugs, of course, are much easier to use than neurosurgical interventions demanded to put complex electronic gears in place. Drugs may constitute the most common future technique for manipulating behavior in various types of institutions if there is concomitant social approval for utilizing them. Their use may be approved where difficult-to-control behavior deviants are involved. Whether such approval will come for implementation of such treatments in classroom learning among, or behavioral control of, children and youth who fall within the normal range of behavior is another issue. The implementation of "drug-assisted" learning in the schools is definitely not likely within the short range, or next ten years.

What can be called "enzyme-assisted instruction" (the word "enzyme" would avoid the negative connotation associated with the word "drug") has a long way to go and may not become a common instructional strategy used in school as late as the year 2000. The side effects of electronic gadgets may be no more serious than irritation or boredom. In contrast, there could be more serious consequences for physical and mental growth and development from the use of "enzymes" to stimulate or control learning. If this ever did come to pass sometime after the year 2000, medical practitioners and teachers would come closer together. Medical training of instructional personnel will become more important, if and when "enzyme-assisted" instruction becomes a reality during the 21st century.

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5. David Krech, "Psychoneurobiochemeducation," *Your AASA in 1968-69*, Arlington, VA: American Association of School Administrators, 1969, pp. 91-105.

It is unrealistic to expect that the learning challenges of the schools will be resolved once and for all after unlocking the secrets of direct stimulation of the brain by electronic devices or by more subtle means such as chemicals called enzymes. Yet some could fantasize that for the harassed teachers and administrators, the millennium could be reached when chemical gases are released through the school ventilating system to keep pupils and teachers, with or without their knowledge, alert during the normal school day. Another way-out notion, if and when enzyme-assisted learning becomes a reality, would be to use the school food services as part of an overall instructional strategy. The so-called "hot lunches" could be seasoned, or laced, with "get-smart" chemicals, substances to improve learning efficiency. This would mean that school administrators could fulfill their instructional leadership by enforcing "anti-brown bag" policies (no one can bring lunches to school in brown bags or colorful lunch buckets) as well as the closed noon hour. These policies would insure that all pupils ate noon meals in the school cafeteria so there could be a positive check that appropriate "learning-induced chemicals" were included in every pupil's diet. At that point in history the school cafeteria could emerge as a learning center at least as important as the school library. What a switch that would be from the reputation the cafeteria has today!

To continue the flight into fanciful specualtions, one could assume that pharmacological technology could even stimulate education among the unborn. Thus, by introducing specified learning stimulants during intrauterine life, greater readiness of the newborn for learning could be the objective. A really wild notion would be to suggest that 100 years from now there may be generations of "womb readers," that is, neonates who spend their months after conception, and while in the womb, learning some rudiments of reading. One could hear the extremists who are most anxious to speed up learning declaring: "After all, the unborn just sits there for 9 months and could, therefore, put this time to profitable use by learning the alphabet if nothing else." Right now, the notion is so far out of tune with the present state of the knowledge that most laugh while others may be offended that such a ridiculous notion is even mentioned.

Influencing learning by direct stimulation of the human brain either by electro-physiological or by enzyme-related means would have profound implications for the formal learning enviroment in the distant future. The school, as a formal institution of learning, has been around for only about 300 years. Prior to that time the home assumed primary responsibility for promoting learning. The home once again could become the primary site, and the school involvement only supplementary. Parents could introduce learning enzymes into the diets of children and adults as well as school officials. In other words, if stimulation of learning did not require the professional touch, there would be little need for a formal institution called the school. It is not likely, however, that learning stimulants can be administered in a haphazard fashion. Likewise, the follow through, that is, the execution of learning exercises that could become more productive through the enzyme, will still require the professional touch. Education is a social experience as well as an intellectual activity. People learn from each other, through the process of social interaction. The social dimension of education will justify the continuation of the school as the predominantly formal learning institution. My conclusion is that the far-out, yet-to-be-developed, approaches to stimulate learning by electro-physiological devices and drugs, will not send the professional in education to extinction. They will dramatically change the competencies necessary to attain excellence.

One final note in the long-term possibilities or the less-likely-to-occur-events. An article printed in the Wednesday, December 11, 1974, issue of the *Los Angeles Times,* part 1B, page 2, carried a London and UPI date line. It declared "all the pleasures of sex without sex." It went on to suggest that we could have "all the satisfaction of alcohol, gambling and gluttony without drunkeness, bankruptcy or obesity." Psychologists were reputed to have reported that all this is within the realm of possibility around the turn of the century. The article quoted a pyschologist at the University of Wales, Institute of Science and Technology, who predicted the use of what were called "do it youself pleasure centers." He stated: "since the 1950's we have known that such centers exist deep in the mammalian brain." Some American psychologists planted electrodes in these centers in the brains of rats. The rats would work hard at pressing a lever when the only reward received was a small electrical impulse through the electrode into the brain. When the electricity supply was turned off, the rats quickly lost interest in the lever. It is not inconceivable that our knowledge of the anatomy of the human brain and our surgical techniques could be advanced to a point where a device the size of a portable cassette recorder could deliver carefully controlled electronic impulses to the brain. Self-stimulation of pleasure centers could well make sex, alcohol, gambling and eating obsolete as modes of human gratifications was implied.

This would be going too far from my point of view. It is my contention that there are some forms of gratification which are better pursued the hard way (joke)! There should be something immoral, if not unethical, about obtaining gratification purely by stimulation of certain brain centers. It would mean disuse of the senses that send signals to the brain. Many of our sensory experiences presently make life worth living.

Learning vs Non-Learning Dimensions—

My second challenge, as the final speaker at this very fine institute, is to place concern for learning in the Chief's perspective, that is, in the context of state education agency. A chief state school officer, like all educational leaders, is more concerned about learning in the context of the real world facing educational institutions than in learning in the abstract, that is, as an intriguing intellectual exercise or simply pursuing knowledge about learning for the sake of knowledge. The bottom line, as far as the chief executive of the state school system is concerned, is what happens to the clientele served (learners) by the educational institution.

Recognizing that learning may occur anywhere, the Chief, or educational leaders, prefers to focus on learning that takes place where it should, namely in the classroom and the related areas of the school. Herein lies part of the problem. It's easy to suggest that you may be belaboring the obvious to declare that the prime function of the school is the promotion of learning. Nonetheless, educational institutions exist in a social, political and economic context. They do not live in isolation or as part of institutions where only pure thoughts, rationality and dedication to academic objectives prevail. That being the case, it is easy for the Chief, as well as educational leaders at other levels, to be distracted by the myriad pressures found in the real world. How nice it would be if elementary and secondary education were conceived of, and were in fact, simple institutions designed to achieve a limited number of educational objectives, through a modest program, for a relatively small and highly motivated group of learners whose intellectual pursuits were reinforced by the home and the culture in which located!

This is not destined to be our fate. On the contrary, a sizeable segment of society defines education in much broader terms. Education, according to this viewpoint, has greater significance than simply promoting learning in the form of transmitting the great cultural heritage or the fundamental processes, frequently referred to as the 3 "R"s. If educational leaders confined the focus to the 3 "R"s only, criticisms would be triggered by those who see the school in terms of its additional and more complex missions. The Chiefs find themselves in the middle of policy debates. One is whether elementary and secondary schools shall be viewed primarily as learning institutions or as instruments for the fulfillment of social, political and economic policies of the nation. An educational system may be conceptualized as the primary means by which society rights social wrongs, whether this is translated into eliminating discrimination among the races and the sexes, overcoming the harsh cycle of poverty, or preventing delinquency among youth and criminality among adults. Some go so far as to argue from the national perspective that we can indeed finetune a heterogeneous culture, to resolve its perlexing social maladjustments simply by manipulating attendance boundaries, reorganizing the kinds of learning experiences available in schools, developing a more equitable mixture of selective characteristics among teachers and other staff members, by the kind of text used, etc. Plato was one of the first to say it. John Dewey expressed it eloquently at a later date, but pretty much the same thread went through it. More recently, a U.S. President spoke about a "great society" and suggested that educational programs can be a powerful force in the development of this ideal society. To do all this obviously would place the schools in a more activist role insofar as the great social issues of our times are concerned. The result is a more controversial institution, if for no other reason than that it is difficult to establish a consensus as to what the primary missions of the schools shall be or how they shall be conceptualized. Many of those who argue that our schools have failed are in effect disagreeing with existing missions statements or conceptualizations. They are, therefore, stating that "the schools are failing to do what I would like tham to do" or "as well as we have a right to expect them to do." The term failure is an evaluative judgment, not a fixed condition.

The so-called "non-learning dimensions" of education dominate most of the headlines most of the time. Obviously, no Chief, or the state education agency as a whole, can afford to ignore them. This is true whether the headlines describe controversies in the form of strikes, faculty integration, escalating tax rates, or community control. Given these facts of life and the intense emotions generated by such issues not as intimately related to learning as others, one can understand why the importance of learning may be lost or at least downplayed. But it never stays down for any long period of time and demands attention on at least a cyclical basis.

The United States of America can look back over its past 200 years and declare without equivocation that it has indeed developed the most comprehensive and most successful system of education the world has ever known. As Henry Steele Commager, the historian, put it: "Never before in history have so many been educated so well." The criticisms that face our school must be put in the context of the efforts to further improve the most comprehensive system of education the world has ever known. It is growing expectations, that is, the demand for more, rather than the struggle to establish the basic rudiments of elementary and secondary education that triggers confrontation. We recognize that inherent in our culture is the implicit belief that somehow more and better schooling will improve social status and increase economic rewards that lead to a richer fuller life. Therefore, when some person or group feels that the good life passed them by, there is a tendency to place the blame on someone other than themselves. The schools are often among the first to suffer from shortcomings, real or imagined, experienced by someone. Nonetheless, it is quality, not simply availability, that stimulates the great educational debates of our period. Documentation of this is readily available. The educational attainment of the nation as a whole is high and illiteracy low. No other nation in history can match what is soon to become, if it is not now a fact, a universal system of community college education in practically all the states. No school system other than our own has dared to try to educate the bottom fraction of the normal curve. Most nations focus their educational system on those with an aptitude to learn and/or with the home support for such learning. Their philosophy can best be summarized in terms of teach the best and forget the rest. If the drop-out rate, as defined in the U.S., were applied to European nations it would be calculated to be extremely high, far higher than here. In our country, educators are held responsible for children and youths who don't go to school as well as those who do. Schooling has become a right in the United States and not simply a privilege or opportunity that the recipient must earn. "No drop-outs" is a demanding goal. The zero-rejections standard is tough to meet where serious constraints are placed on resources allocated to public schools. As the Chiefs well know, the many educational accomplishments of our culture are not catalogued to boast or signal a time for smug satisfaction but rather to place criticisms in their proper perspective. Whatever may have been our past educational achievements, and however good we look in comparison to developed and other undeveloped nations of the world, we still have not reached the quality level necessary to satisfy the present needs of clientele served. Our culture demands more, and those whose professional lives are tied to the educational enterprise find themselves ensnarled in struggles over who controls schools, what the new priorities for education shall be, and how we can obtain greater involvement of teachers through formal organizations in school operations.

Educational confrontations of whatever type or intensity find their way into the

Chief's office. The social, political, and economic forces changing the schools in so many ways also end up redefining the roles of the Chief State School Officer and his/her staff. But the point being made is that the multiplicity of factors that impinge upon this office make it extremely difficult to focus on only one segment of the educational enterprise, namely, the promotion of learning. This is, however, a most important segment. It is a tribute to the Chiefs gathered here during this Institute that they have indeed dedicated themselves to understanding more about learning.

Influencing Learning from a Distance—

There is a great distance between where learning takes place and the Chief's office. It is much greater than the problem of distance confronting local school administrators. This further compounds the difficulty a Chief faces in promoting or enhancing the effectiveness of learning. By the same token, the Chief cannot escape accountability for what happens to learning that takes place some distance from his or her office. The task of influencing learning from the Chiefs' perspective is compounded because this office is at least twice removed from the classroom setting.

Few Chiefs have any real opportunity to teach by personal example or involvement in the classroom. One of the persistent myths in education is that an administrator demonstrates leadership in learning or instruction by what can be called a "show and tell method," namely, by making an effort to teach a class now and then even though you can't do it every semester. This is rejected as an oversimplification and unfortunate misconception of the challenges confronting those in leadership positions. In reality, this idea can do more harm than good if for no other reason than that it switches the focus from general leadership tasks to what a single prefessional does for a limited number of pupils in a single class who might benefit from an administrator with a record as an outstanding teacher in the field in which he or she qualifies for a teaching credential. But more than that, it overlooks the fact that it is incumbent upon the administrator to impact on many professionals interacting with others. If there is to be significant improvement in learning at the classroom level it must come from influencing the quality of teaching performance throughout the entire state system rather than simply for that fortunate handful of pupils in a single situation at a single point and time. In other words, Chiefs are held responsible for the improvement of learning among hundreds of thousands of learners, not simply the handful that could be in the class you could teach but you never got around to. It is physically impossible for a Chief to influence learning to any significant degree by the practice of actual classroom instruction or observation. That myth should be put to rest even though it may not look good in a press release.

There are other ways of remaining close to the classroom and sensitive to what's happening to learning without actual teaching. Some recommend that the Chief's best strategy is classroom visitation on a frequent and continuous basis. This also sounds good in press releases. But the sheer magnitude of this suggests that it too may sound better than it can come out in actual practice. Furthermore, even if you know what classrooms to visit where in the state, the biggest probable payoff from this strategy would be merely to help you to develop a sensitivity to a problem. It will not resolve the problem. There is the added danger of generalizing from a limited sample visited. Many years ago, it will be recalled, personnel from the state agency did try to implement this strategy of visiting all the schools in the state. The limited impact of the so-called "state inspections" resulted in its abandonment and a transfer of resources to other leadership functions which held a higher pay-off in impacting on learning and educational leadership. It does not deserve reincarnation as an "instructional leadership strategy."

Obviously, strategies which impact on learning for hundreds of thousands of people must be based on yet other approaches. One is based on the notion that what happens to teachers (a) either in their preparation or how they enter the profession, (b) their continuing professional development and/or under what circumstances they can renew their teaching credential, and, of course, (c) in creating an environment conducive to the maximization of learning can have the most significant impact on learning. Chiefs influence learning with and through the help of others. The others being the teachers in the classroom situation as well as the educational leaders held responsible for the improvement of instruction at the local level. No Chief can do it alone. Each segment of the profession contributes to instructional leadership what its resources or position in the system best equips him to do. Clearly then, how the preparation of teachers and the teaching act are perceived by the Chiefs and other educational leaders at the state level can have a significant impact on what happens to learning.

The conceptualization of what is a teacher, that key person in the learning process, has changed over the years, albeit rather slowly. For much of history, the teacher was viewed as a person who knew more subject matter than anyone else. This was the concept of the teacher as a subject-matter specialist—someone with a specialization who knew more and was better able to tell pupils about the intricacies of a given subject. A long and bitter struggle ensued to change this conceptualization. It isn't over as yet. Some state laws continue to insist on the primacy of subject-matter specialization. Nonetheless, we are moving toward the perception of the professional in education that is similar to the professional in other fields, particularly medicine. The teacher is being viewed as a diagnostician of learning capabilities and problems as well as the designer and implementer, either alone or with assistance of others in a team, of appropriate learning strategies and actions. Many other professions sensed this long before education did and moved ahead in preparing practitioners accordingly. The medical doctor objects to being viewed as a "pill pusher" or someone in possession of great knowledge or information about the human body and health in the abstract. The emphasis in medical schools is on the competency to diagnose health status or health problems of the client before prescribing a regimen for improvement. They know that penicillin can lick many infections. It can't handle all, or even worse, some can get sicker from penicillin than from the infection it's supposed to cure. The lawyer as a professional practitioner must be able to define the legal problems before designing a defense or other appropriate action. There is an artistic component in the education profession as well as in others.

It is unfortunate that so much of what is demanded in determining one's fitness to enter the education profession focuses on matters which are less critical to success and performance than diagnosis of learning difficulties, designing of appropriate treatments, execution, and assessment of individual learning outcomes. Obviously, you can't teach what you don't know. Competence in a discipline is only one of many competencies a teacher needs.

As stated early, we have not acquired an adequate comprehension of the many and complex factors involved in the learning process. What's more, there are no shortcuts to generating knowledge that can reduce our ignorance. The Chiefs can help in the improvement of learning by joining in partnerships with research and development laboratories, centers, and universities that can contribute to an increased knowledge of learning. The Chiefs, and key staff people, must be involved in this knowledge production process if for no other reason than that they are in the best position to define problems. All too often researchers have never been in a classroom as teachers or have no true feeling about what's happening in the field and, therefore, end up with bizarre definitions of problems and come up with even more bizarre conclusions.

If existing learning environments fail to reach or stimulate given sets of learners who may be suffering from specific intellectual, social or economic disadvantages, then the obvious conclusion is other learning strategies, or instructional organizations, must be created to get the job done. If we know that what we are doing isn't getting the job done, then the reasonable course of action is to attempt something else. This suggests change, sometimes called innovation. An important function for a state education agency is to be involved in the change process. The Chiefs, as well as other educational leaders, have learned the hard way and with many personal embarrassments that change carries no guarantee, that change is a hope and is basically neutral. It can be for the better or it can be for the worse. There are risks involved when you modify in a substantial way existing patterns of operation. Nonetheless, it is like the farmer who plants seeds and hopes for a bumper crop. It may not sprout or grow into a bountiful harvest, but you know for sure that if you don't plant the seeds there is no hope for any kind of a crop. Change is a gamble we must take.

On more than one occasion successful *pilot* programs for new learning techniques with promising results for improving learning, fell far short of expectations following *full* implementation. In the last 10-15 years it has become increasingly obvious that the human factors in change are far more signigicant than the technology *per se*, working arrangements, or special structures. What often happens in pilot programs is that professionals involved spend the time and effort to acquire new competencies. Such teachers are also highly motivated by the visibility and attention being awarded in a new setting.

The fear of the unknown is no small problem to those less motivated who come in after the publicity has subsided. Professionals will hang onto old ways of doing things until they develop confidence in new competencies. Changing names alone is unlikely to result in improvement. One of the reasons why Klausmeier's approach to disseminating the multi-unit school concept proved to be as effective as it has been is the importance he attached to helping the teachers acquire new competencies before teachers are asked to perform in a different kind of instructional environment. This does not come quickly or easily. It takes a year or two, and sometimes three or more, before new competencies replace the old and teachers resist temptations to lapse into previously ineffective modes of instructional behavior. There is no substitute for support services to those asked to abandon long established modes of professional performance.

Some 10 or 15 years ago technology was touted as the single best hope for the improvement of instruction in the classroom situation. Much was heard about how the computer was to revolutionize the classroom. About 10 years ago I was part of a special team that assessed and visited various U.S. centers involved in developing computer assisted instruction. At the conclusion of these visitations, investigations and deliberations it become evident that the "computer instruction revolution" was not imminent. Contrary to the prevailing publicity of the late 1960's, this group declared that we were 10 years and $10 billion away from extensive and common usage of computer assisted instruction in the classrooms. In the late 1960's this point of view was interpreted as ultraconservative rather than hard nosed reality as we saw it. As history will show, the statement was much too optimistic rather than ultraconservative. What happened was that other social and educational priorities emerged, school enrollments dropped, and inflation got out of hand. In short, the nation failed to invest the additional billions for the development of instructional materials, or software, to make computer-assisted instruction feasible. Some day CAI may be used more extensively. It deserves to be emphasized that technology, or other new approaches introduced in the classroom, will prove effective only if professionals in the classroom acquire the special capabilities to apply it to its best advantage. You must change people; that is, you must help the instructional personnel acquire the new competencies needed to make computer-assisted instruction work, as well as to demonstrate the judgment or the artistry of knowing when computer-assisted instruction is effective, with what kinds of learners, and in what kinds of situations.

The recurrent theme is that Chiefs must work with and through others to make great learning possible. Involvement of the state education office in helping professionals acquire new competencies to sustain effectiveness or to reach new levels of excellence is what it's all about. To repeat, the trick is to impact on learning for the thousands, hundreds of thousands, yes, millions. This switches the focus from performance of the Chief as a single instructor or classroom visitor to his providing the leadership to influence the behavior of thousands of teachers impacting upon hundreds of thousands of students.

The challenge is to create the environments that are most conducive to maximizing learning outcomes. Each Chief strives to make great teaching possible. What is difficult is to translate rhetoric into reality, to operationalize strategies that would enable educational leaders at the state level to satisfy the urgent and the essential demands for the improvement of learning. Obviously the conference designed here in San Diego stands as testimony that no matter what other pressures there may be in your time schedule, learning remains a matter of high priority. You start from the facts that one cannot proceed to be a leader in a given area if he is ignorant of the fundamental facts and theories in that area. Knowing what's involved in learning is an important key and hopefully this knowledge was presented by some of the best minds of the nation. By this time you sense we have much more to learn about the different types of learning for different types of students as well as the many limitations in the state of the psychometric art. We lack the necessary instruments to measure the kinds of learning as precisely as we would like. It doubtless isn't very comforting to know that the evidence on teaching effectiveness is difficult to come by. Only during the last decade have we come to identify the more promising areas for further research and development.

Learner Advocacy—

In this day and age when so much emphasis is placed on the welfare of professionals in the field, the number who proclaim primary interest in the learner has dwindled. No Chief can hope to foster improvement in learning without first assuming a learner advocacy posture. This is an important as well as significant public relations posture for each Chief State School Officer.

Obviously Chiefs in most states influence those who qualify for entry into the profession and practice of teaching. The administration of the credentialing, or the teacher and administrator certifying process, by law rests with most state education agencies. The Chiefs' reponsibilities in this area may from time to time be threatened by those who have special reasons for controlling the entry process. The Chiefs' reason should be based on learner advocacy, insuring that the learner gets the best qualified. Political struggles are found in many states over who shall assume control over accreditation of preparation programs, licensing and employment qualifications. There are egos involved, associations to be justified, jobs to protect, and salaries to be maintained. There are power bases to protect within unions and associations. Mix all these factors together, and the role of the Chief State School Officer in helping to create an environment most conducive to maximizing desired learning outcomes is made more difficult. The social, political and economic factors are not always closely associated to the issue of who is the best qualified and prepared to enter education as a professional.

No Chief should give up on the battle to maintain a leadership role in determining who is best qualified to enter and continue as a teacher or serve as a leader in other dimensions of education. He or she who is most capable in projecting the learner advocacy posture and the public's interest is the best qualified to administer in an objective and professional fashion the important accreditation and credentialing functions. Credentialing authority is also important to the improvement of learning. If either credentialing or the accreditation function is removed by legislative action or union politics to groups other than the Chief, then the state education agency's leadership role in the improvement of instruction will suffer accordingly. The people of the state or territory are best represented through the state education agency in the fight for learners rather than through the representation of a special interest group. Your youth and child advocacy role as well as advocacy of improvement of learning deserve greater prominence and recognition. No single segment of the profession must be allowed to control entry into the practice. The state education agency should be the central meeting ground for all segments of the profession, that is, for the educational community as a whole.

A related factor is the generation of the new insights, as well as programs, aimed at professional development of teachers, leaders, as well as aides. The importance of disseminating information is also crucial. There are no easy roles for Chiefs seeking to impact upon the improvement of learning.

Chiefs and Auditing Change—

Let me expand in a special dimension of the role of the Chief in the educational change process. It may not be as glamorous as others, but deserves some attention. For much of educational history it was believed that all you had to do was to declare you firmly believed in doing "the best job possible" and would place the interest of children above all else. It raised a lump in your throat and gave you a warm glow just to say that. No one could question your motives once you stated these magic words. Good intentions could then be substituted for good design. Faith in fellow professionals justified forgetting about the monitoring progress. Great hopes made clarification of objectives unnecessary. This made education more like a religion based on warm faith in your fellow professionals rather than a behaviorial science rooted in the cold facts of reality. Someone once said that people would believe anything if you tell them it's a rumor. We started many rumors about how beneficial the new program changes would be. The end product was promising more than could be delivered. The consequences were inevitable. We were embarrassed when judgment day arrived. Many got badly burned, and there was a consequent loss in credibility; that is, the so-called credibility gap emerged. Even worse, there were short-lived changes with discontinuance a common occurrence rather than improvement of learning. The end result was that educators acquired the image of really not knowing what they were doing. We were accused of playing fruit basket upset with a complex educational system, creating more problems than were solved.

Program evaluation from within and program auditing from without are essential tools in the improvement of learning outcomes. This is an important dimension of the change agent. Nobody loves an evaluator, but there is no better way to insure progress. Evaluation and auditing unfortunately are repugnant to many and their processes may be perceived as a very embodiment of that evil known as negativism. They are equated with fault-finding rather than being viewed as a positive force, or the first disciplined step toward improvement and increased productivity.

Nonetheless, it is my contention that while innovation without auditing may be a sham and a delusion, some prefer that to bruised egos. Chiefs dedicated to learning improvement can't afford that. Gaining perspective about ourselves can be a humbling experience. Program innovation—that is, willingness to take a risk with the new and the untried—is a precondition to program auditing and evaluation. The persistent problems simply are not being resolved by yesterday's practices, nor do they go away when we try to ignore them. As the old saying goes, there's nothing more powerful than an idea whose time has come. Program evaluation and auditing will not be denied because their time has come. We are changing but no longer are naive enough to believe in change for the sake of change. Experience again has taught us the obvious, namely, that you can change for the worse as well as the better.

The psychological factors of program evaluation and auditing must be examined as well. There are people who are afraid to go to the doctor because he might find something is wrong with them. Man doesn't always behave like the rational animal he prides himself to be. It's not unusual to find high-minded, experienced, well-prepared professionals avoiding, if not resisting, evaluation and auditing because something bad could be documented. This lack of confidence in the professional capabilities could degenerate into paranoia with reference to auditing.

Program auditing may have undesirable side effects. It can, if used unwisely, extinguish the sparks of creativity. Auditors who are only faultfinders, or who believe they are walking Supreme Courts ready to deliver judgments without compassion, can harm. Nonetheless, there can be no judgment rendered that learning has improved without evaluation and auditing. The state education agency can have an important impact on the improvement of learning through evaluation and auditing. The trick is to make sure that this enhances rather than dampens the innovative spirit.

In Conclusion—

The Chief can forge ahead with a disciplined approach to the age-old problem of the improvement of learning. As a professional who performs with care and integrity, he or she must be sharp of mind, but humbled by the realization that the state of the art in our profession, insofar as learning improvement is concerned, is rudimentary and leaves much to be desired. Yet he or she can never dismiss interest in learning because of that fact. He or she cannot do it alone.

This institute has tackled one of the most difficult but also one of the most significant problems confronting educators today. The focus of instructional leadership is the teaching-learning situation. Whatever is done at the administrative level must eventually find its way to the classroom level. Leadership is an activating force, and the leadership capabilities of a Chief State School Officer are evident as he or she works with teachers and others in the task of promoting more effective learning among pupils. The human relations skills and understanding that involve working with teachers from a distance as individuals and in groups must be an integral part of every instructional leader. In addition to this he or she must comprehend who speaks for learners for America. Many claim to. The learner advocacy role for the Chief is very important.

My congratulations to the Chiefs for their devotion to learning and, of course, my best wishes in continually trying to improve learning in the schools. You shall be in my prayers, and on occasion you may need them. As always, I wish you great success in this endeavor.

Chapter XIII

A SUMMARY REPORT ON THE 1976 CHIEF STATE SCHOOL OFFICERS' SUMMER INSTITUTE

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In summarizing the conference, I wish to share with my colleagues a thought for the day which might be considered a "Porterism." I have been doing a little bit of reading while in San Diego and getting a whole lot of experience, particularly on the tennis court. Having given these ideas some thought and realizing the theme of this conference was learning, this is what I came up with—

EDUCATION is what you get when you read the fine print,

EXPERIENCE is what you get when you don't, and

LEARNING is combining the two.

First, I am not getting a stipend for my arduous efforts either Tuesday or this morning, which seems unfortunate, but at least I've learned a lot!

I think it's very important that the summary of this outstanding conference begin with a statement of what its purpose was and was not. It was *not* a conference designed to allow for the presentations or the discussions to focus solidly on answers and solutions.

It was, on the other hand, a conference designed to explore the breadth and depth of the meaning of learning and the implications of that meaning on how children and youth grow, develop and perform primarily in the public schools.

The work sessions were kicked off by Ralph Tyler's stimulating presentation which put the issues in focus from an international perspective. Three highlights from the remarks were:

1 Learning is the acquisition of new ways of thinking, feeling and acting.
2 Tyler noted the critical issue about learning is consensus on what is important that school people want children to learn. (He noted you can't keep human behavior in an icebox.)
3 Tyler noted that much latent talent was in the schools, and in some way that talent needed to be tapped in a more systematic way.

Our second speaker on Friday, Herb Klausmeier, reviewed by overlay some of his research on the principles and methods of learning and noted the successful effect that the Individually Guided Education program was having nationwide. In my opinion, the importance of the presentation was the identification of four conditions necessary for effective learning:

1 Students being actively involved in the process rather than having a passive attitude;
2 what is to be learned must be at the proper level of difficulty;
3 adequate time must be given for acquisition of that to be learned; and
4 proper guidance and continuity from level to level must be provided.

Our third speaker, John Goodlad, picked up on Monday where we left off on Friday focusing primarily on the agreed upon Goals of Education. He noted that, from his research, Americans are in agreement on the following eleven or so goals:

1 Fundamental literacy skills
2 Preparation for a career and job satisfaction
3 Intellectual skills for independent judgments
4 Understanding of traditions and values
5 Ability to function adequately in a variety of social settings
6 Ability to plan and organize for realization of personal goals
7 Knowledge and skills to perform constructively as a citizen
8 Self-understanding
9 Aesthetic perceptions and creativity
10 Emotional and physical well-being
11 Moral and ethical character

To achieve these goals in terms of student learning, Goodlad strongly suggested four basic conditions:

1 Need of a theoretical base for learning
2 Need for a plan on how to proceed
3 Need to look for healthy schools
4 Need for total staff commitment

Goodlad suggested the need for a model. Modifying the work of Carroll, he suggested nine variables for such a model:

1 Subject matter revision
2 Organizational context change
3 Aptitude of student
4 Ability of student to understand
5 Perseverance
6 Pedagogy determination
7 Expressiveness
8 Media
9 Opportunity

He concluded by indicating he was now prepared to state there is an inverse relationship between state licensing and the quality of teacher education.

On Monday afternoon, the Director of N.I.E., Bud Hodgkinson, noted that in terms of learning potential most individuals can develop specific abilities far above what one would expect on the basis of measures of general aptitude. Hodgkinson noted that, in the short run, three changes in instruction could improve the level of learning:

1 Addition of specific subject courses;
2 Increasing the amount of time spent on tasks; and
3 Changing the format of texts and altering other written materials.

In the long run, he noted that getting youngsters to decode may not differentiate between skilled and unskilled readers. There is a need to develop new diagnostic measures of comprehension which take into consideration advances in the theory of text understanding.

Hodgkinson further presented to the Chiefs four charts which explain the activities of the N.I.E. in regard to implementing basic learning theories.

In summarizing, he noted that only thirty percent of a school day is devoted to learning tasks and in the long run the adequacy of a mother's diet and health care of Americans may influence learning more than any other variable.

On Tuesday, the Michigan team presentation was an effort to show how many of the ideas, thoughts, practices and experiments laid out by the four previous speakers might be applied statewide. It began with a review of what had been learned about teaching the basic skills, leading into a slide show on the data available building by building as a comman indicator of what is a successful school. This overview was necessary in establishing the formula for determining an "educationally healthy school building" and establishing a new role for the State Department of Education. It was noted that one key element of the presentation was the following principle:

We should MEASURE that which can be measured and
DESCRIBE that which can only be described.

The importance of this point was to emphasize the fact that everything the schools attempt to teach is not and should not be quantified.

The heart of the presentation was the GESTALT, a unique plan to Get Educational Specialists Thinking and Acting on Learning Theory. A slide presentation outlined the major features of the plan, which emphasized the need for professional develoment of staff, particularly the principal. A booklet was specially prepared for the meeting to provide each Chief with a take-home document on how the plan works. A school superintendent, principal, teacher and state department staff member explained the importance of the GESTALT from their respective points of view.

Grant Venn followed the Michigan focus on elementary and middle schools by extending the participants' horizons in terms of interrelating learning with work experience for high school students. He observed that the problem was one of relating learning and earning to youth yearnings. He noted that there were three objectives to be achieved:

1 Preparing youth for adulthood;
2 Providing youth with work skills; and
3 Educating youth to move from dependence to interdependence.

Venn suggested secondary youth be allowed to work with lower level youth, and that schools be required to maintain contact with high school youth a year after leaving school. His final point was that youth need to learn to be responsible.

Sid Marland closed the Tuesday session with a discussion of the uniqueness of the seventy-five years of the College Board by noting that one-third of all high school graduates take the S.A.T.; and, when the P.S.A.T. and the A.C.T. are included, seventy percent of the seniors have been tested. Marland noted that the S.A.T. was a powerful information system which is voluntary and standard setting and is a common currency in estimating college success.

Discussion continued on the issue of declining scores. Marland noted that high retention will probably rise slowly during the rest of this century and that schools will be more open, with students moving in and out. As far as the basic conditions which might contribute to declining scores are concerned, he suggested four:

1 Faults in the test
2 Population being tested
3 The changing curriculum of the schools
4 Factors external to the schools

Marland concluded by suggesting there might be a need for nationwide standards to offset the impact of the S.A.T.

On Wednesday, Arthur Combs presented a challenge to the Chiefs in terms of including humanistic goals in any list of learning objectives. He noted that any information transmitted to a person will affect the person directly in proportion to its "personal meaning" to the person. He noted that educators could not ignore the laws of learning because they were inconvenient. He also noted that schools seemed to always be solving problems and answering questions which have not yet confronted children.

Combs cautioned the Chiefs not to use the industrial model which produces a product by the workers since products of the schools are the workers. Combs indicated a need to finance research in establishing humanistic objectives and initiating needs assessment. He suggested four things that could bring about effective schools:

1 Recognize humanistic goals of education
2 Demonstrate that such goals are important and have a pay off
3 Eliminate dehumanizing aspects of schooling
4 Define humanistic objectives more precisely
5 Provide in-service education to school staffs

Combs requested the Chiefs to consider the side effects of any major innovations in public education by testing such innovations against four questions:

1 Is it really the objective sought?
2 Will the innovation really accomplish the mission?
3 What are the possible side effects on teachers?
4 What are the possible side effects on students?

Wilson Riles and staff from the California Department of Education concluded the Wednesday discussion by focusing attention on the learning needs of the multi-ethnic multi-cultural advantaged who seek learning in their native tongue and culture. California Department staff noted that the nation should be moving from bicultural to cross-cultural learnings, but that no assessment instruments were available to measure the needs and progress in the area. Six problem areas were identified following a slide presentation:

1 Too many definitions of the problem
2 Confusion about parent and family involvement
3 Disagreement in curriculum and instruction sequencing
4 Financing
5 Lack of trained teachers
6 Evaluation and dissemination techniques

On Thursday Ken McIntyre focused attention on the greatest school-related factor in student learning, which is the personnel hired as educators. He noted two problem areas: (1) recruiting and (2) training such persons. He expressed concern about the average person in school administration who tends to be less able than those in other fields. He suggested colleges need to be more selective initially and more discriminating in the use of training methods. McIntyre suggested four areas of screening for good personnel:

1 *Intelligence*—He noted that although tests are imperfect, biased, and misused, they predict better than letters, rating scales, or interviews, but "the more the information, the better the selection."
2 *Interpersonal Relationships*—He expressed the belief that this was becoming an increasingly important area and that biographical data and sociometrics seemed the best predictors.
3 *Moral Values*—The compassion, the concern for the broad issues of rightness and wrongness, and the capacity to exhibit qualities of thoroughly *human* beings is difficult to measure, but he felt personal history and telephone contacts were the best sources of information.
4 *Emotional and Physical Fitness*—McIntyre indicated these as an important area, but no simple gimmicks were available, although past performance is the best indicator of future performance.

McIntyre concluded by identifying thirty-two competencies in eight categories for the training of effective principals. He noted that on-the-job effectiveness was more highly related to such training devices as gaming, simulation, and internships rather than to academic knowledge.

The Thursday program was concluded by Willard Abraham, who focused on seven areas related to learners with special problems:

1 In terms of *social conditions,* every third family, including all grandparents, has an exceptional child. One in eight, or twelve percent of the population, is so classified. Families tend to go through three stages: (a) shock, (b) searching, and (c) acceptance.
2 *Trends* suggest it takes fifteen years for three percent of the schools to adopt an idea, and twenty years more for the other ninety-seven percent to do so.

There will be more individualized instruction, resource persons and mainstreaming. "Island children" (slow learners) will continue to exist along with the six-hour retarded child.

3 *Myths* tend to center around the beliefs that
—mainstreaming will solve the problems
—eliminating labels will eliminate handicaps
—the courts can solve all problems
—the gifted will muddle through
—manipulations will be effective
—mandatory special education is the answer
—early childhood education is a solution to the problem
—it is possible to keep up with literature

4 In terms of the *federal role,* he noted that Public Law 94-142 will revolutionize special education. The Law provides for free public education service. Hearings are being held currently on the regulations.

5 *Surveys* of state officials seem to indicate states have few administrative problems but aren't involved in the cutting edge.

6 *Surveys* of graduate students pinpoint the need for more training of regular teachers and the need to establish parenting programs.

7 In terms of a *summary,* Abraham identified three major problems: (a) financing, (b) setting up priorities, and (c) in-service training.

The presentation was concluded with an identification of eleven predictions for the future including infancy, parent advocacy, media, and implications for all public education.

The Friday concluding session by Steve Knezevich focused on the fact that educators still operate more from the pragmatic in the teacher-learner process than from basic research—"We use what seems to work for the majority."

He noted that educators were only beginning to ask the right questions, and that we must appreciate the limitations of schooling which is nontheoretical, unscientific, and socially political. Knezevich spent considerable time on what might be and concluded that without the commitment to fund new techniques, it is not likely they'll be installed; but if they are, the school as we know it today would probably not continue to exist.

He noted schools are social institutions as much or more so than learning institutions which makes the task more difficult. Schools exist in social, political and economic setting, not in isolation. Many people tend to view the schools as having a broader responsibility than just the promoting of learning.

On the other hand, Knezevich noted that no other nation has attempted to educate the lower quarter of the normal distribution curve, the general feeling being till recently that "you teach the best and forget the rest."

Knezevich questioned the efficacy of the techniques some Chiefs and other school administrators use of teaching a class or visiting a school as a solution to the problem of providing instructional leadership. He expressed the belief that Chiefs are responsible for all learners and must design models to improve the total system;

and it cannot be done by isolated "show and tell" sessions. He predicted that by 1985 the teacher would be conceptualized more as a diagnostician.

He noted that the major reason pilot projects fail when implemented on a large scale is because of a lack of trained and committed personnel, which usually requires more time and retraining than is provided. He concluded by stressing the need for internal evaluations and external audits if schooling were to improve, no matter how painful such activities might be to the uninitiated.

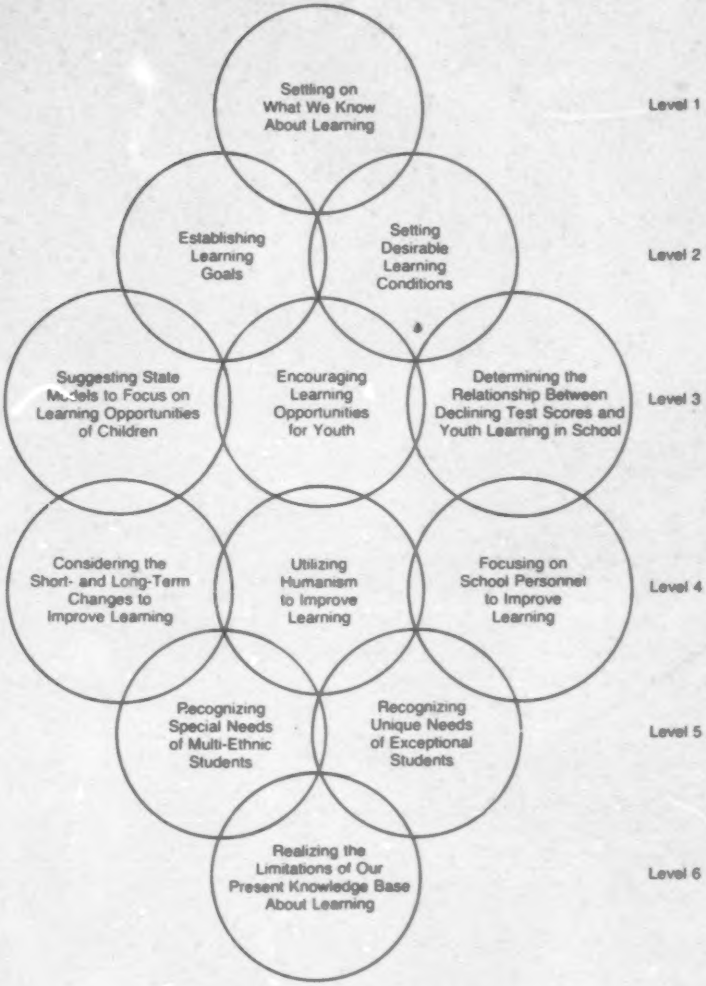
John Porter summarized by stating the 1976 Summer Institute focused on the topic "Learning" in terms of:

1 Determining what we know about student learning as described by Tyler; followed by
2 setting desirable conditions for effective student learning by Klausmeier;
3 identifying the goals from which student learning can be measured as contributed by Goodlad as the opener for the Monday morning session;
4 considering the short- and long-term changes to improve student learning as provided by Hodgkinson;
5 suggesting a state model for improving student learning at the elementary level as presented by the Michigan team on Tuesday morning; followed by
6 setting necessary learning opportunities for secondary youth in terms of transition to adulthood as presented by Venn;
7 establishing the relationship between declining test scores and what youth learn in school as presented by Marland in closing the Tuesday session;
8 utilizing the laws of learning to better reach students through humanistic approaches as the challenge from Combs;
9 recognizing the unique learning needs of the multi-ethnic and multi-culturally advantaged as the challenge of the California team; which was closely associated with
10 focusing on school personnel as the greatest school factor in student learning as outlined by McIntyre;
11 recognizing the special learning needs of the exceptional student as the focus of the presentation by Abraham; and the Institute concluded with
12 realizing the limitations of our present knowledge base about learning as reviewed by Knezevich.

Porter suggested the conference be thought of in terms of the twelve interlocking rings of learning consistent with the twelve presentations. He also suggested the attached chart which illustrates learning linkages based upon six levels.

The Twelve Interconnecting Rings of Learning

Linking Learning Levels


Settling on What We Know About Learning
Level 1
Establishing Learning Goals
Setting Desirable Learning Conditions
Level 2
Suggesting State Models to Focus on Learning Opportunities of Children
Encouraging Learning Opportunities for Youth
Determining the Relationship Between Declining Test Scores and Youth Learning in School
Level 3
Considering the Short- and Long-Term Changes to Improve Learning
Utilizing Humanism to Improve Learning
Focusing on School Personnel to Improve Learning
Level 4
Recognizing Special Needs of Multi-Ethnic Students
Recognizing Unique Needs of Exceptional Students
Level 5
Realizing the Limitations of Our Present Knowledge Base About Learning
Level 6